PTI

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Draft

Quarterly Creosote Extraction Summary Fourth Quarter 1994

McCormick & Baxter Creosoting Company

Prepared for

Oregon Department of Environmental Quality
Portland, Oregon

February 1995

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PTI Contract C412-03-04

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ACRONYMS AND ABBREVIATIONS

DAF	dissolved air flotation
DEQ	Oregon Department of Environmental Quality
DNAPL	dense nonaqueous-phase liquid
FWDA	Former Waste Disposal Area
GAC	granular activated carbon
LNAPL	light nonaqueous-phase liquid
McCormick & Baxter	McCormick & Baxter Creosoting Company
NAPL	nonaqueous-phase liquid
PAH	polycyclic aromatic hydrocarbon
PCE	Pollution Control Engineering
PNG	Pacific Northern Geosciences
TFA	Tank Farm Area
TFAB	tank farm area beach
TLC	thin-layer chromatography

INTRODUCTION

This report summarizes the results of creosote extraction activities for the 4-month period between September and December 1994 at the McCormick & Baxter Creosoting Company (McCormick & Baxter) site. Data summarized for this reporting period include monthly maximum measured nonaqueous-phase liquid (NAPL) thickness; monthly and cumulative pure-phase NAPL extracted from the TFA and FWDA; total fluids extracted from the Tank Farm Area (TFA); operation of the pilot wastewater treatment system; estimated volume of NAPL stored onsite; and activities scheduled for the next reporting period.

PURE-PHASE NAPL EXTRACTION

NAPL thickness is measured in productive wells weekly, and within the estimated residual NAPL plume area on a monthly basis. Figure 1 presents well locations, site layout, and the estimated extent of the residual NAPL plume. The historical and monthly maximum measured thickness for dense nonaqueous-phase liquid (DNAPL) and light nonaqueous-phase liquid (LNAPL) is summarized in Tables 1 and 2. During the reporting period (September through December), the maximum NAPL thickness at the Former Waste Disposal Area (FWDA) was approximately 34 ft (MW-20i). In the TFA, the maximum NAPL thickness was approximately 9 ft (MW-Is). In both wells, the NAPL occurs as DNAPL.

NAPL is removed from wells within the extraction network that contain significant measurable thicknesses of NAPL (Figure 1). Extraction is performed weekly and includes water/product level monitoring and purging of selected wells, adjustment of extraction rates, and documentation of NAPL recovery activities in the TFA, FWDA, and Retort Area. Table 3 presents a summary of cumulative NAPL extracted since 1989, NAPL extracted by the extraction system since it was implemented February 1993, and NAPL extracted for this reporting period.

Approximately 154 gal of pure-phase NAPL were recovered between September and December 1994 including 116 gal of DNAPL and 38 gal of LNAPL. Most of the NAPL was recovered from MW-20i (69 gal of DNAPL) and from EW-15 (33 gal of LNAPL) located in the FWDA. Limited NAPL measurements and extraction were conducted in the TFA due to total fluids testing being conducted in this area. Approximately 9 gal of LNAPL were extracted from the TFA from EW-1s. A summary of NAPL extracted from individual wells is presented in Appendix A (Tables A-1 through A-4). Figure 2 presents a graphic summary of NAPL extracted during 1994. Figure 3 presents the cumulative pure-phase NAPL extracted from the site since 1989.

The tank farm area beach (TFAB) trench wells (TM-1 through TM-5) are monitored on a monthly basis for the presence of LNAPL. LNAPL is expected to accumulate in the trench during periods of low river stage and tide; however, to date no LNAPL has been measured in the trench since installation in October 1993.

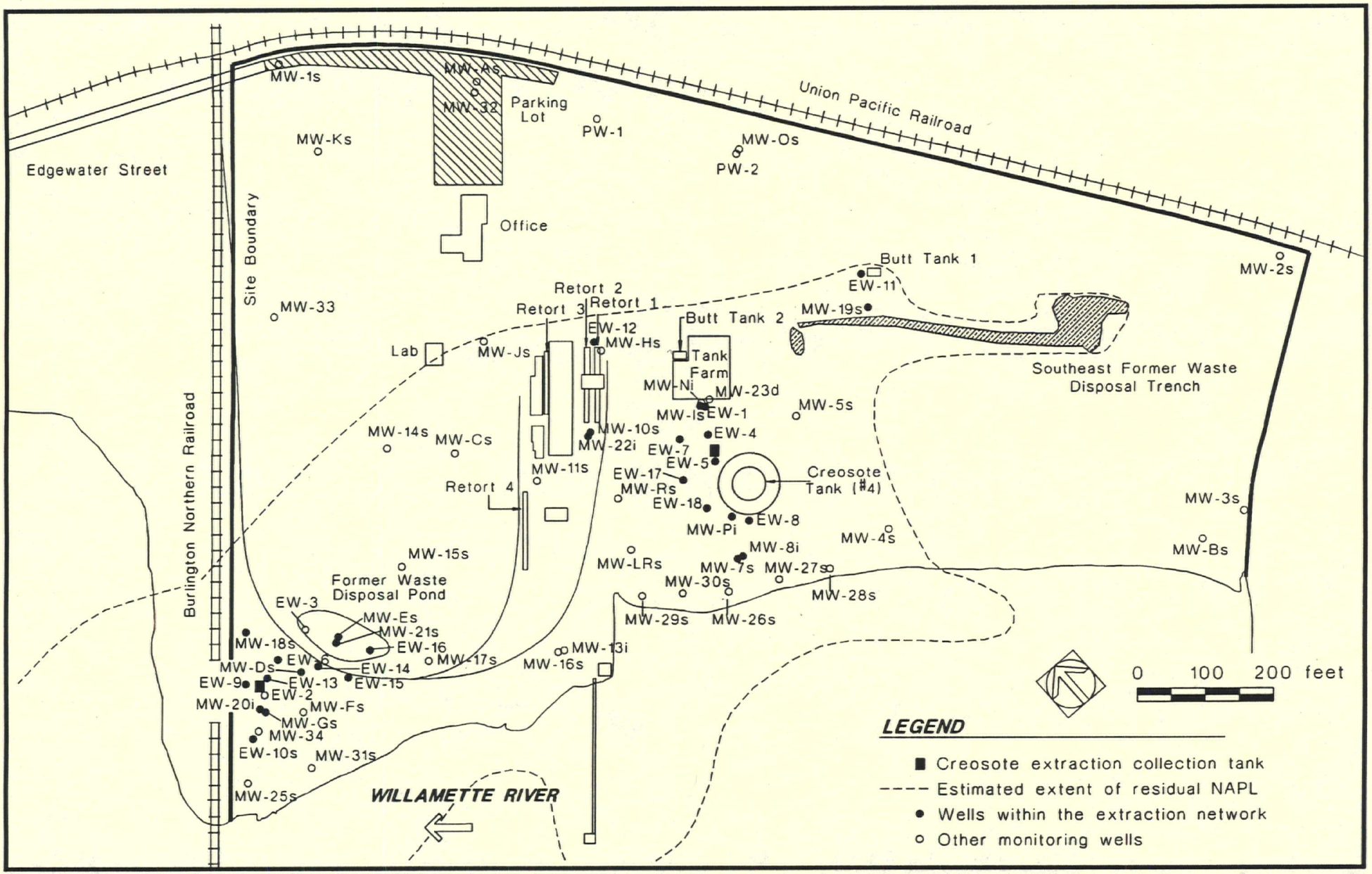

Figure 1. Site features and well locations.

C4120304\EXTRACTION\WELLS2.DWG L 020195

TABLE 1. HISTORICAL AND MONTHLY MAXIMUM DNAPL THICKNESS

Well ID	Maximum DNAPL Thickness (ft)	Date	September 1994 DNAPL Thickness (ft)	October 1994 DNAPL Thickness (ft)	November 1994 DNAPL Thickness (ft)	December 1994 DNAPL Thickness (ft)
Tank Farm Area						
EW-1s	3.73	12/94	--	<0.01	--	3.73
EW-4s	6.2	03/93	--	--	--	0.67
EW-5s	0.86	09/94	0.86	--	--	<0.01
EW-7s	2.09	12/94	--	--	--	2.09
EW-8s	2.7	07/93	2.02	1.97	--	2.02
EW-17s	1.06	03/93	<0.01	<0.01	<0.01	<0.01
EW-18s	<0.01		1.42	<0.01	<0.01	<0.01
MW-Is	9.93	08/87	9.18	4.74	--	7.73
MW-LRs	<0.01		<0.01	<0.01	--	<0.01
MW-Ps	<0.01		<0.01	<0.01	--	<0.01
MW-Rs	<0.01		<0.01	<0.01	--	<0.01
MW-7s	3.67	11/91	1.27	2.17	--	2.64
MW-8s	1.78	11/91	1.04	1.15	--	1.55
MW-23d	<0.01		<0.01	<0.01	--	<0.01
Disposal Trench Area						
MW-11s	<0.01		<0.01	--	--	<0.01
MW-19s	2.01	07/91	<0.01	1.33	--	1.36
Retort Area						
EW-12s	1.09	03/94	<0.01	0.42	--	0.56
MW-10s	<0.01		<0.01	<0.01	--	<0.01
MW-11s	<0.01		<0.01	<0.01	--	<0.01
MW-13i	<0.01		<0.01	<0.01	--	<0.01
MW-14s	<0.01		<0.01	<0.01	--	<0.01
MW-16s	<0.01		<0.01	<0.01	--	<0.01
MW-22i	3.02	10/94	2.72	<0.01	--	2.99
MW-Cs	<0.01		<0.01	<0.01	--	<0.01
MW-Hs	<0.01		<0.01	<0.01	--	<0.01
MW-Js	<0.01		<0.01	<0.01	--	<0.01
TFA Beach Wells						
TM-1	<0.01		<0.01	<0.01	--	<0.01
TM-2	<0.01		<0.01	<0.01	--	<0.01
TM-3	<0.01		<0.01	<0.01	--	<0.01
TM-4	<0.01		<0.01	<0.01	--	<0.01
TM-5	<0.01		<0.01	<0.01	--	<0.01
MW-26s	<0.01		<0.01	<0.01	--	<0.01
MW-27s	<0.01		<0.01	<0.01	--	<0.01
MW-28s	<0.01		<0.01	<0.01	--	<0.01
MW-29s	<0.01		<0.01	<0.01	--	<0.01
MW-30s	<0.01		<0.01	<0.01	--	<0.01
Former Waste Disposal Area						
EW-2s	1.9	08/91	<0.01	0.23	--	<0.01
EW-6s	3.4	08/93	1.2	1.18	2.23	0.67
EW-9s	2.69	12/94	2.45	1.93	2.52	2.69
EW-10s	<0.01		<0.01	<0.01	--	<0.01
EW-13s	<0.01		<0.01	<0.01	--	<0.01
EW-14s	<0.01		<0.01	<0.01	<0.01	<0.01
EW-15s	<0.01		<0.01	<0.01	--	<0.01
EW-16s	<0.01		<0.01	<0.01	--	<0.01
MW-15s	<0.01		<0.01	<0.01	--	<0.01
MW-17s	<0.01		<0.01	<0.01	--	<0.01
MW-18s	<0.01		<0.01	<0.01	--	<0.01
MW-20i	34.32	12/94	21.69	15.13	9.06	34.32
MW-21s	<0.01		<0.01	<0.01	<0.01	<0.01
MW-34i	<0.01		<0.01	--	--	<0.01
MW-Ds	6.01	01/94	2.81	2.93	0.5	5.5
MW-Es	4.2	08/87	<0.01	<0.01	--	<0.01
MW-Fs	<0.01		<0.01	<0.01	--	<0.01
MW-Gs	14.85	03/91	2.45	1.85	--	7.14
FWDA Beach Wells						
MW-25s	<0.01		<0.01	<0.01	--	<0.01
MW-31s	<0.01		<0.01	<0.01	--	<0.01

Note: -- no measurement taken <0.01 – not measurable

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TABLE 2. HISTORICAL AND MONTHLY MAXIMUM LNAPL THICKNESS

Well ID	Maximum LNAPL Thickness (ft)	Date	September 1994 LNAPL Thickness (ft)	October 1994 LNAPL Thickness (ft)	November 1994 LNAPL Thickness (ft)	December 1994 LNAPL Thickness (ft)
Tank Farm Area						
EW-1s	<0.01		--	<0.01	--	<0.01
EW-4s	1.5	09/92	--	--	--	<0.01
EW-5s	0.72	12/93	<0.01	--	--	<0.01
EW-7s	1.4	09/92	--	--	--	<0.01
EW-8s	<0.01		<0.01	<0.01	--	<0.01
EW-17s	<0.01		<0.01	<0.01	<0.01	<0.01
EW-18s	4.43	04/94	1.42	0.94	1.39	1.25
MW-Is	<0.01		<0.01	<0.01	--	<0.01
MW-LRs	<0.01		<0.01	<0.01	--	<0.01
MW-Ps	<0.01		<0.01	<0.01	--	<0.01
MW-Rs	2.81	09/94	2.81	2.73	--	2.58
MW-7s	2.76	09/92	--	<0.01	--	<0.01
MW-8s	<0.01		<0.01	<0.01	--	<0.01
MW-23d	<0.01		<0.01	<0.01	--	<0.01
Disposal Trench Area						
MW-11s	<0.01		<0.01	--	--	<0.01
MW-19s	<0.01		<0.01	<0.01	--	<0.01
Retort Area						
EW-12s	<0.01		<0.01	<0.01	--	<0.01
MW-10s	8.08	02/93	1.17	3.94	--	<0.01
MW-11s	<0.01		<0.01	<0.01	--	<0.01
MW-13i	<0.01		<0.01	<0.01	--	<0.01
MW-14s	<0.01		<0.01	<0.01	--	<0.01
MW-16s	<0.01		<0.01	<0.01	--	<0.01
MW-22i	<0.01		<0.01	<0.01	--	<0.01
MW-Cs	<0.01		<0.01	<0.01	--	<0.01
MW-Hs	<0.01		<0.01	<0.01	--	<0.01
MW-Js	<0.01		<0.01	<0.01	--	<0.01
TFA Beach Wells						
TM-1	<0.01		<0.01	<0.01	--	<0.01
TM-2	<0.01		<0.01	<0.01	--	<0.01
TM-3	<0.01		--	<0.01	--	<0.01
TM-4	<0.01		<0.01	<0.01	--	<0.01
TM-5	<0.01		<0.01	<0.01	--	<0.01
MW-26s	<0.01		<0.01	<0.01	--	<0.01
MW-27s	<0.01		<0.01	<0.01	--	<0.01
MW-28s	<0.01		<0.01	<0.01	--	<0.01
MW-29s	<0.01		<0.01	<0.01	--	<0.01
MW-30s	<0.01		<0.01	<0.01	--	<0.01
Former Waste Disposal Area						
EW-2s	<0.01		<0.01	<0.01	--	<0.01
EW-6s	2.13	04/94	1.85	0.74	<0.01	<0.01
EW-9s	<0.01		<0.01	<0.01	<0.01	<0.01
EW-10s	7.5	07/93	0.1	0.36	--	1.25
EW-13s	<0.01		<0.01	<0.01	<0.01	<0.01
EW-14s	1.11	08/94	1.11	1.34	--	<0.01
EW-15s	8.25	09/94	8.25	5.44	1.96	0.32
EW-16s	<0.01		<0.01	<0.01	--	<0.01
EW-19	<0.01		<0.01	<0.01	<0.01	<0.01
EW-20	0.25	09/94	0.25	0.29	<0.01	<0.01
MW-15s	<0.01		<0.01	<0.01	--	<0.01
MW-17s	<0.01		<0.01	<0.01	--	<0.01
MW-18s	0.14	09/94	0.14	0.8	--	<0.01
MW-20i	<0.01		<0.01	<0.01	--	<0.01
MW-21s	10.28	09/92	1.38	1.34	1.34	1.37
MW-34i	<0.01		<0.01	<0.01	--	<0.01
MW-Ds	<0.01		<0.01	<0.01	--	<0.01
MW-Es	2.97	09/92	1.25	1.33	--	<0.01
MW-Fs	<0.01		<0.01	<0.01	--	<0.01
MW-Gs	2.34	09/92	<0.01	<0.01	--	<0.01
FWDA Beach Wells						
MW-25s	<0.01		<0.01	<0.01	--	<0.01
MW-31s	<0.01		<0.01	<0.01	--	<0.01

Note: -- no measurement taken <0.01 – not measurable C4120304\Creo\BigLNAPL.Wk1

TABLE 3. PURE-PHASE NAPL EXTRACTION SUMMARY

Area	Cumulative (since 1989)	Extraction System (since February 1993)	Current Period (Sept-Dec 1994)
TFA	909	247	17
FWDA	1256	680	134
TFAB Trench	0	0	0
Other Areas	13	11	3
Total LNAPL	NA	NA	38
Total DNAPL	NA	NA	116
Site Total	2,178	938	154

Note: FWDA - former waste disposal area
TFA - tank farm area
TFAB - tank farm area beach (installed in October 1993)
NA - not available

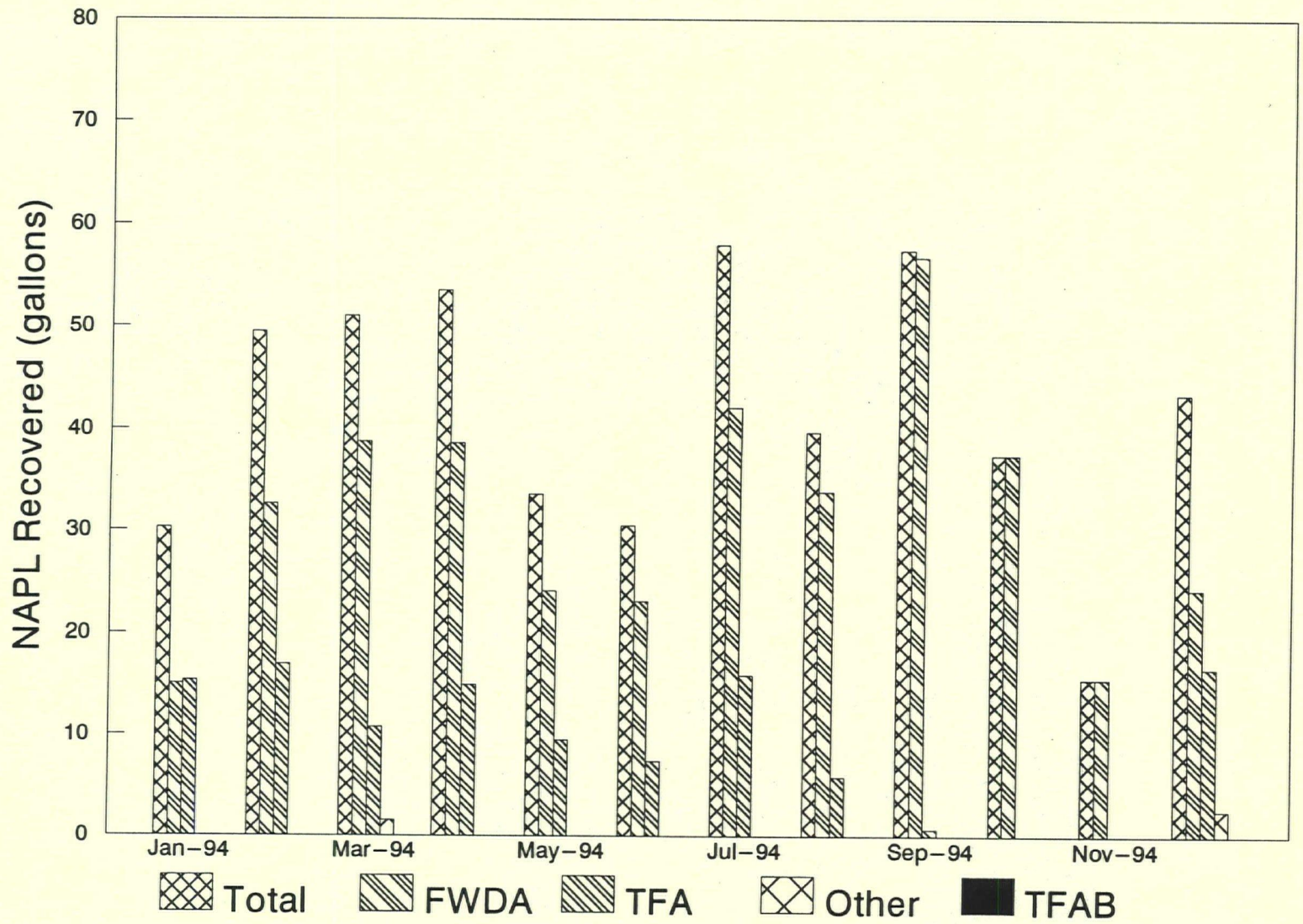

Figure 2. Pure–phase NAPL extraction system recovery .

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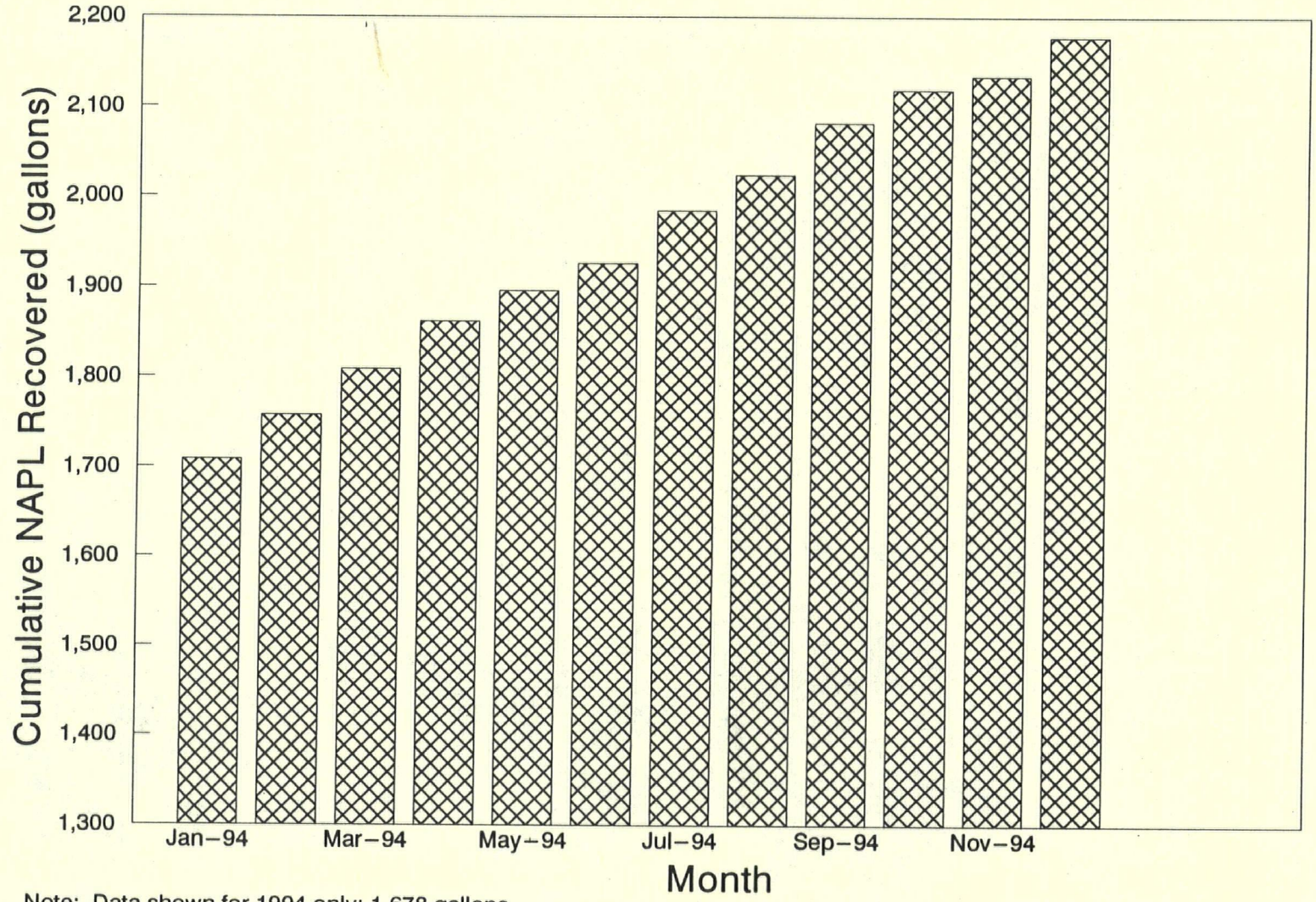

Note: Data shown for 1994 only; 1,678 gallons were extracted from 1989 to January 1994.

Figure 3. Cumulative pure–phase NAPL extracted since 1989.

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TOTAL FLUIDS EXTRACTION

Groundwater pumping from EW-4 and EW-7 in the TFA was initiated during the reporting period in addition to pumping from EW-1 to fill the influent tank as part of the total fluids testing and pilot wastewater treatment program. Table 4 summarizes total fluids removed since inception. Approximately 46,926 gal of fluids were extracted from the three wells during the reporting period. Approximately 17,866 gal of groundwater were treated and discharged to the Willamette River in late October; the remaining water is stored within the treatment system.

As indicated earlier, total fluids pumping from the TFA was initiated as part of the total fluids testing and pilot wastewater treatment program. Based upon visual estimates, the extracted fluids contained less than 1 percent NAPL. Quantities of NAPL extracted from the total fluids pumping have been estimated from the influent holding tank (Tank 1) at 240 gal and the sludge tank (Tank 4) at 160 gal. Testing of NAPL yields from the TFA and other areas will commence when the pilot wastewater treatment system is operational. Testing of the total fluids extraction system will be performed in accordance with the Draft NAPL Extraction System Operations and Maintenance Manual (December 1994).

TABLE 4. TOTAL FLUIDS PUMPING SUMMARY

Well	Total Hours Pumped	Rate (gpm)	Total Fluids Extracted (Sept-Dec) (gal)	Estimated NAPL Extracted (Sept-Dec) (gal)	Cumulative Total Fluids Extracted (since Aug-94) (gal)	Cumulative NAPL Extracted (since Aug-94) (gal)
EW-1s	77.5	1.8	8,370	NM	8,370	NM
EW-4s	98	2.8	15,876	NM	15,876	NM
EW-7s	135	2.8	22,680	NM	22,680	NM
Total	340	NA	46,926	400	53,067	400

Note: NM - not measurable
NA - not applicable

SEDIMENT NAPL INVESTIGATION

The sediment NAPL investigation was initiated in 1993 and additional work was conducted in October 1994 to evaluate the presence and extraction of active NAPL pools in near-shore sediments. Recoverable NAPL was found in sediments in a area around the creosote dock with measurable thicknesses of LNAPL, up to 1 ft thick. Pure-phase NAPL extraction resulted in purging the volume of NAPL within the well. Further testing of total fluids pumping did not enhance NAPL recovery. Discharge of NAPL (as indicated by oily sheen on the river surface) to sediments appears to be greatest during low river stages when hydraulic gradients are steepest. Increases in air and water temperatures during the summer months may reduce the NAPL viscosity. This increase also coincides with the lowest river stages and increased sediment agitation caused by tidal fluctuations and river traffic, which could be resulting in increased NAPL discharge. Based on the results of the sediment investigations, it is recommended that further testing of pure-phase NAPL extraction be conducted to investigate the influence of river stages and daily tidal cycles.

WASTEWATER TREATMENT PLANT

Construction of the pilot water treatment plant was completed in September 1994. The pilot plant is used to treat groundwater derived through total fluids extraction efforts. The wastewater treatment plant consists of a dissolved air flotation (DAF) unit, which removes the bulk of the organics from the influent, followed by a granular activated carbon (GAC) polishing unit. The DAF unit was assembled and fine-tuned by September 23. Initial operation of the GAC unit indicated leaking drum tops; this problem was rectified during the first week in October.

Analytical samples were collected in early October to test the efficiency of the GAC system. In addition, samples were collected for thin-layer chromatography (TLC) field screening analysis to test for breakthrough of organics in the GAC system. Initial TLC results indicated up to 3 mg/L of polycyclic aromatic hydrocarbon (PAH) compounds, and the system was shut down pending receipt of analytical results. Laboratory results indicated that there were no organic compounds present above method reporting limits, and the system was restarted.

On October 17, following treatment of the first batch of wastewater, the effluent batch tank (BT-3a) was sampled for compliance with the special discharge permit issued by the Oregon Department of Environmental Quality (DEQ). Analytical results from BT-3a were below permit levels, and approximately 17,866 gal of treated water were discharged to the Willamette River on October 25. Analytical results are summarized in Table 5, and presented in Appendix B.

The second batch sample in the effluent holding tank was sampled on November 3, 1994, and indicated zinc levels between 150 μg/L and 340 μg/L. (Discharge criteria is 110 μg/L.) The system was shut down and samples were collected at the wells and throughout the treatment system in an attempt to identify the source of the anomalously high zinc concentrations. Water samples indicated zinc levels at 23.3 mg/L in the influent/separator tank (Tank 1) and 24.8 mg/L in the flow equalization tank (Tank 2). Samples collected from wells in the TFA contained zinc levels between 30 μg/L and 80 μg/L. Groundwater from sediment well #3, which was tested for NAPL extraction during the period, was also sampled and contained 240 μg/L zinc. The source of the elevated zinc levels in the treatment plant is currently unknown. Results of metals analysis are summarized in Table 6, and presented in Appendix B.

Following receipt of analytical data in late November, metals treatment options were evaluated by PTI with the assistance of Onsite Enterprises (Warren Hansen) and Pacific Northern Geosciences (PNG). On December 6, an ion-exchange resin column was ordered from Pollution Control Engineering (PCE), vendor of the DAF system, in an attempt to reduce zinc levels in the effluent tank (Tank 3a). The ion-exchange resin

TABLE 5. SUMMARY OF EFFLUENT ANALYTICAL RESULTS

Parameter	Special Permit Limit[a]	Sample BT3-1[b]	Sample BT3-2[c]
Total 8270 analytes[d]	<1 mg/L	<0.0035 mg/L	<0.0035 mg/L
Pentachlorophenol	<0.010 mg/L	0.00016 mg/L	<0.0035 mg/L
Arsenic (total)	<0.048 mg/L	<0.005 mg/L	<0.005 mg/L
Chromium VI	<0.011 mg/L	<0.010 mg/L	<0.010 mg/L
Chromium III[e]	<0.210 mg/L	<0.010 mg/L	<0.010 mg/L
Copper	<0.012 mg/L	<0.010 mg/L	<0.010 mg/L
Zinc	<0.110 mg/L	0.040 mg/L	0.034 mg/L
Free product	No visible sheen	No visible sheen	No visible sheen
pH	6.5–8.5	7.0	7.0

[a] Special permit issued by DEQ on September 6, 1994.

[b] Sample collected from batch tank on October 17, 1994; discharged October 23, 1994.

[c] Sample collected from batch tank on November 3, 1994; holding for additional treatment.

[d] Sum of 8310 and 8040 Modified analytes.

[e] Total chromium.

TABLE 6. SUMMARY OF METALS IN WASTEWATER

Sample ID	Date Sampled	Location	As (mg/L)	Cr (mg/L)	Cu (mg/L)	Fe (mg/L)	Mn (mg/L)	Na (mg/L)	Zn (mg/L)	Remarks
EFFLUENT										
BT3–1	10/17/94	Tank 3	<0.005	<0.01	<0.01	--	--	--	0.04	Batch 1 (Discharged 10/25/94)
BT3–2	11/03/94	Tank 3	<0.005	<0.01	<0.01	--	--	--	0.34	Batch 2 effluent (1st sample)
BT3A–2A	11/11/94	Tank 3	--	--	--	--	--	--	0.15	Batch 2 effluent (duplicate)
DIS FILT	11/11/94	Tank 3	--	--	--	--	--	--	0.13	Filtered Batch 2 effluent
Tk3a	11/23/94	Tank 3	<0.005	<0.01	<0.01	1.18	4.3	297	0.15	Batch 2 effluent (full suite of metals)
BT3A	12/12/94	Tank 3	--	--	--	--	--	--	0.13	Batch 2 after running through carbon again
BT3A	12/28/94	Tank 3	--	--	--	--	--	--	0.22	Batch 2 following ion–exchange resin
SYSTEM										
GAC1–Eff	10/04/94	GAC eff	0.036	<0.01	0.03	--	--	--	0.06	Carbon effluent (after filters and GAC)
GAC1–Inf	10/04/94	GAC inf	<0.005	<0.01	0.03	--	--	--	0.19	Carbon influent (after filters)
BT5 EFF	11/11/94	Blank	--	--	--	--	--	--	<0.01	Equipment blank
GAC EFF	11/11/94	GAC eff	--	--	--	--	--	--	0.88	Carbon effluent (after filters and GAC)
T1 EFF	11/11/94	Tank 1	--	--	--	--	--	--	23.3	Tank 1 (pre–DAF)
T2 EFF	11/11/94	Tank 2	--	--	--	--	--	--	24.8	Tank 2 (post–DAF)
TK1 EFF	11/21/94	Tank 1	0.015	<0.01	<0.01	58.9	--	--	86.2	Tank 1 (pre–DAF)
TK1 INF	11/21/94	Tank 1	0.017	<0.01	0.07	55.7	--	--	0.09	Delivery system to Tank 1
TK2 EFF	11/21/94	Tank 2	0.005	<0.01	<0.01	17.1	--	--	21.5	Tank 2 (post–DAF)
W741C	11/21/94	TFA	0.054	<0.01	<0.01	48.2	--	--	0.04	Composite of EW–1, 4, & 7 from TFA
Well 1	11/21/94	EW–1	--	--	--	--	--	--	0.03	Well EW–1 in TFA
Well 4	11/21/94	EW–4	--	--	--	--	--	--	0.08	Well EW–4 in TFA
Well 7	11/21/94	EW–7	--	--	--	--	--	--	0.08	Well EW–7 in TFA
Sed3	11/23/94	Sed Well 3	0.079	0.04	0.07	124	3.98	18.8	0.26	Sediment well #3 (full suite)

column was delivered to the site on December 22, 1994 and plumbed into the pilot treatment system the following day.

Effluent wastewater held in Tank 3a (previously treated by the DAF and GAC units) was treated by the ion-exchange column and water samples were collected on December 28, 1994. Analytical results from effluent water treated by the ion-exchange column indicated zinc levels of 220 μg/L, still above discharge criteria.

The results of further testing of metals treatment methods will be presented in subsequent creosote extraction reports. In addition, alternative permit options (i.e., land application or higher discharge limits) will be pursued to facilitate plant operations. At present, the plant remains shut down until an effective metals treatment method is installed or modifications to the discharge permits are completed.

NAPL STORAGE

Pure-phase NAPL from routine extraction in the FWDA and other areas is pumped into 55-gal drums and manually transferred into the FWDA storage tank. Table 7 lists the NAPL storage tank capacity and tank measurements at the end of the reporting period. Approximately 834 gal of NAPL and 333 gal of water are present in the storage tank. According to weekly extraction records, approximately 938 gal of NAPL have been extracted by the system since February 1993, 220 gal of which were disposed of by CET during tank dismantling activities. The net volume of NAPL from extraction records (extraction records less NAPL disposed of) is approximately 16 percent less than measured in the storage. The discrepancy between the weekly extraction records and measured tank volume is due to difficulties in accurately measuring the small weekly volumes and distinguishing the different NAPL phases in the holding tank.

In addition to NAPL contained in the storage tank, approximately 400 gal of NAPL are contained in Tank 1 (influent/separator tank) and Tank 4 (sludge tank) at the pilot treatment plant.

Once sufficient NAPL has been recovered from site operations (approximately 5,000 gal), a subcontractor will be selected to properly characterize, transport, and dispose of the NAPL and sludge from pure-phase and total fluids extraction efforts.

TABLE 7. SITE STORAGE TANK MEASUREMENTS

Tank	Water Volume	NAPL Volume	Total Tank Volume	Unused Storage
FWDA storage tank	333	834	2,936	1,768
Influent/separator tank (Tank 1)	NA	240	NA	NA
Sludge Tank (Tank 4)	NA	160	6,000	5,840
Total onsite	NA	1,234	8,936	7,608

Note: Results reported in gal

ACTIVITIES PLANNED FOR SUBSEQUENT REPORTING PERIODS

The pure-phase NAPL extraction, total fluids extraction system, and wastewater treatment will continue to be evaluated over the next few reporting period. Data gathered during the investigation will be summarized in subsequent quarterly reports. Specific activities will include the following:

- Metals treatment options will be evaluated for the wastewater treatment plant. This includes polishing effluent water using other resins or compounds (e.g., manganese oxide) and flocculation.
- A sample of storm water from the retort sumps will be collected and analyzed to assess the possibility of mixing storm water with wastewater prior to treatment (to reduce overall metals loading to the plant).
- Land application of effluent and higher discharge limits for metals will be evaluated by PTI and DEQ.
- Once the pilot wastewater treatment system is operational, overall plant performance, carbon loading, and chemical consumption will be evaluated.
- Recovery data (following purging activities) will be collected from MW-20 in the FWDA and other productive wells to determine optimum purge frequencies, and to reassess the possibility of an automated pumping system for these wells.
- Total fluids extraction testing will continue in general accordance with the Draft NAPL Extraction System Operations and Maintenance Manual (December 1994) once the treatment plant is operational. In addition, total fluids and dual-phase testing will be reevaluated in the FWDA in future reporting periods.

APPENDIX A

NAPL Extraction Summary

TABLE A–1. SEPTEMBER 1994 EXTRACTION RECORD
McCORMICK & BAXTER

Well ID	Pumping Frequency	NAPL Removed (gal) Monthly Total	NAPL Removed (gal) Cumulative Since Feb 1993	Remarks
Tank Farm Area				
MW–1s			89.0	Not purged due to demolition
MW–Ps			0.0	
MW–7s			1.3	
MW–8i			0.0	
EW–1s			75.2	
EW–3s			0.0	
EW–4s			5.0	
EW–5s			0.6	
EW–7s			1.8	
EW–8s			1.8	
EW–17			3.7	
EW–18	P1	0.7	51.9	LNAPL
Total		0.7	230.3	
Tank Farm Area Beach Interceptor Trench				
TM–1			0	
TM–2			0	
TM–3			0	
TM–4			0	
TM–5			0	
Total		0	0	
Former Waste Disposal Area				
MW–Ds	P4	4.7	50.3	DNAPL
MW–Es			0.0	
MW–Gs			0.5	
MW–18s			0.0	
MW–20i	P4	21.5	316.2	DNAPL
MW–21s	P1	1.1	48.2	LNAPL
EW–2s			0.6	
EW–6s	P2	1.8	23.9	LNAPL/DNAPL
EW–9s	P2	2.7	47.2	DNAPL
EW–10s			46.5	
EW–13			0.0	
EW–14			0.0	
EW–15	P4	25	69.3	LNAPL
EW–16			0.0	
Total		56.8	602.6	
Other Areas				
MW–10s			5.0	
EW–11			0.0	
EW–12			2.7	
MW–19s			0.0	
MW–22i			0.7	
Total		0.0	8.4	
Site Totals		57.5	841.3	

Note: C – pumped continuously for number of hours reported
DNAPL – dense nonaqueous–phase liquid
LNAPL – light nonaqueous–phase liquid
P – pumped intermittently for number of purges indicated

TABLE A–2. OCTOBER 1994 EXTRACTION RECORD
McCORMICK & BAXTER

Well ID	Pumping Frequency	NAPL Removed (gal) Monthly Total	NAPL Removed (gal) Cumulative Since Feb 1993	Remarks
Tank Farm Area				
MW–1s			89.0	Wells in tank farm area are being pumped for total fluids
MW–Ps			0.0	
MW–7s			1.3	
MW–8i			0.0	
EW–1s			75.2	
EW–3s			0.0	
EW–4s			5.0	
EW–5s			0.6	
EW–7s			1.8	
EW–8s			1.8	
EW–17			3.7	
EW–18			51.9	
Total		0.0	230.3	
Tank Farm Area Beach Interceptor Trench				
TM–1			0	
TM–2			0	
TM–3			0	
TM–4			0	
TM–5			0	
Total		0	0	
Former Waste Disposal Area				
MW–Ds	P3	4.9	55.2	DNAPL
MW–Es			0.0	
MW–Gs			0.5	
MW–18s			0.0	
MW–20i	P4	21.6	337.8	DNAPL
MW–21s			48.2	
EW–2s			0.6	
EW–6s			23.9	
EW–9s	P2	2.9	50.0	DNAPL
EW–10s			46.5	
EW–13			0.0	
EW–14			0.0	
EW–15	P4	8.1	77.4	LNAPL
EW–16			0.0	
Total		37.4	640.0	
Other Areas				
MW–10s			5.0	
EW–11			0.0	
EW–12			2.7	
MW–19s			0.0	
MW–22i			0.7	
Total		0.0	8.4	
Site Totals		37.4	878.7	

Note: C – pumped continuously for number of hours reported
DNAPL – dense nonaqueous–phase liquid
LNAPL – light nonaqueous–phase liquid
P – pumped intermittently for number of purges indicated

TABLE A–3. NOVEMBER 1994 EXTRACTION RECORD
McCORMICK & BAXTER

Well ID	Pumping Frequency	NAPL Removed (gal) Monthly Total	NAPL Removed (gal) Cumulative Since Feb 1993	Remarks
Tank Farm Area				
MW–1s			89.0	Wells in tank farm area are being pumped for total fluids
MW–Ps			0.0	
MW–7s			1.3	
MW–8i			0.0	
EW–1s			75.2	
EW–3s			0.0	
EW–4s			5.0	
EW–5s			0.6	
EW–7s			1.8	
EW–8s			1.8	
EW–17			3.7	
EW–18			51.9	
Total		0.0	230.3	
Tank Farm Area Beach Interceptor Trench				
TM–1			0	
TM–2			0	
TM–3			0	
TM–4			0	
TM–5			0	
Total		0	0	
Former Waste Disposal Area				
MW–Ds	P2	1.4	56.6	DNAPL
MW–Es			0.0	
MW–Gs			0.5	
MW–18s			0.0	
MW–20i	P2	10.4	348.1	DNAPL
MW–21s			48.2	
EW–2s			0.6	
EW–6s	P1	1.2	25.1	
EW–9s	P1	2.5	52.6	DNAPL
EW–10s			46.5	
EW–13			0.0	
EW–14			0.0	
EW–15			77.4	LNAPL
EW–16			0.0	
Total		15.5	655.5	
Other Areas				
MW–10s			5.0	
EW–11			0.0	
EW–12			2.7	
MW–19s			0.0	
MW–22i			0.7	
Total		0.0	8.4	
Site Totals		15.5	894.2	

Note: C – pumped continuously for number of hours reported
DNAPL – dense nonaqueous–phase liquid
LNAPL – light nonaqueous–phase liquid
P – pumped intermittently for number of purges indicated

TABLE A–4. DECEMBER 1994 EXTRACTION RECORD
McCORMICK & BAXTER

Well ID	Pumping Frequency	NAPL Removed (gal) Monthly Total	NAPL Removed (gal) Cumulative Since Feb 1993	Remarks
Tank Farm Area				
MW–1s	P2	3.2	92.2	
MW–Ps			0.0	
MW–7s	P2	0.9	2.2	
MW–8i			0.0	
EW–1s	P1	9.1	84.3	
EW–3s			0.0	
EW–4s			5.0	
EW–5s			0.6	
EW–7s	P1	1.7	3.5	
EW–8s	P1	1.7	3.5	
EW–17			3.7	
EW–18			51.9	
Total		16.5	246.8	
Tank Farm Area Beach Interceptor Trench				
TM–1			0	
TM–2			0	
TM–3			0	
TM–4			0	
TM–5			0	
Total		0	0	
Former Waste Disposal Area				
MW–Ds	P2	3.0	59.6	DNAPL
MW–Es			0.0	
MW–Gs	P2	3.4	3.9	
MW–18s			0.0	
MW–20i	P3	15.2	363.3	DNAPL
MW–21s	P1	0.6	48.8	
EW–2s			0.6	
EW–6s			25.1	
EW–9s	P1	2.1	54.6	DNAPL
EW–10s			46.5	
EW–13			0.0	
EW–14			0.0	
EW–15			77.4	LNAPL
EW–16			0.0	
Total		24.3	679.8	
Other Areas				
MW–10s			5.0	
EW–11			0.0	
EW–12			2.7	
MW–19s			0.0	
MW–22i	P1	2.5	3.2	
Total		2.5	11.0	
Site Totals		43.4	937.6	

Note: C – pumped continuously for number of hours reported
DNAPL – dense nonaqueous–phase liquid
LNAPL – light nonaqueous–phase liquid
P – pumped intermittently for number of purges indicated

APPENDIX B

Laboratory Reports

Analytical**Technologies,**Inc. 17400 S.W. Upper Boones Ferry Road, Suite 270 Durham, OR. 97224
(503) 684-0447 (503) 620-0393 (FAX)

ATI I.D. 410529

November 14, 1994

Dan Peek
PTI Environmental Services
400 Kruse Way, Pl. #2-285
Lake Oswego, OR 97035

Project Name / Number: McCormick & Baxter / C4120308

Attention: Dan Peek

On October 4, 1994, Analytical Technologies, Inc. received two water samples for analysis for the above listed project. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

Please note that the TOC analysis was networked to Analytical Technologies, Inc., in Pensacola Florida.

If you have any questions or comments, please do not hesitate to contact us at (503)684-0447.

Vivian Fuchise
Project Manager

Brian Hennes FOR
Alan J. Kleinschmidt
Laboratory Manager

AJK:alm
Enclosure

Analytical**Technologies,**Inc.

SAMPLE CROSS REFERENCE SHEET

CLIENT:	PTI Environmental	**ATI I.D.:**	410529
PROJECT #:	C4120308		
PROJECT NAME:	McCormick & Baxter	**MATRIX:**	WATER

ATI #	CLIENT DESCRIPTION	DATE SAMPLED
410529-1	GAC1-Inf	10/04/94
410529-2	GAC1-EFF	10/04/94

----------TOTALS----------

MATRIX	# SAMPLES
WATER	2

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical**Technologies,**Inc.

ANALYTICAL SCHEDULE

CLIENT: PTI Environmental **ATI I.D.:** 410529
PROJECT #: C4120308
PROJECT NAME: McCormick & Baxter

ANALYSIS	TECHNIQUE	REFERENCE	LAB
Arsenic	AA/GF	EPA 7060	PLD
Copper	ICAP	EPA 6010	PLD
Chromium	ICAP	EPA 6010	PLD
Zinc	ICAP	EPA 6010	PLD
Oil & Grease	Gravimetric	EPA 413.1	PLD
PAHs	HPLC/UV/FLUOR	EPA 8310	PLD
Penta & Tetra Chlorophenol	GC/ECD	EPA 8040	PLD
Solids, Total Suspended (TSS)	Gravimetric	EPA 160.2	PLD
TOC	UV/Oxidation	EPA 415.1	PNR

PLD = ATI - Portland
R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical**Technologies,**Inc.

CASE NARRATIVE FOR EPA METHOD 8040M

PENTACHLOROPHENOL

ATI ACCESSION NUMBER 410529

A one liter aliquot of each aqueous sample was acidified to a pH of 2 and extracted with methylene chloride by liquid:liquid continuous method (EPA method 3520). The methylene chloride was reduced and exchanged to hexane. The phenols in the extract were derivatized using diazomethane into methyl ethers. Final volume was 5.0 ml.

The extracts were analyzed by gas chromatography using a electron capture detector (ECD). A RTX-35 megabore column was used for quantitation and a RTX-1701 megabore column, attached to a separate ECD, was used for confirmation. Five and six point calibration curves were generated and utilized for the analysis.

The sample used for the matrix spikes contained a high level of pentachlorophenol, approximately 10 times the amount spiked into the sample. The amount spiked in is insignificant to the amount in the sample. The blank spikes produced acceptable results.

BRIAN HENNES

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

METHOD:	8040 MOD	**ATI I.D.:**	410529-0
CLIENT I.D.:	METHOD BLANK	**DATE SAMPLED:**	NA
CLIENT:	PTI Environmental	**DATE RECEIVED:**	NA
PROJECT #:	C4120308	**DATE EXTRACTED:**	10/10/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/11/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	ug/L

PARAMETER	RESULTS	
TETRACHLOROPHENOL (TOTAL)	<	0.20
PENTACHLOROPHENOL	<	0.05

SURROGATE:

TRIBROMOPHENOL (20% - 100%)	57%

Analyst: BH 10/12/94

Reviewer: 10/12/94

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

METHOD:	8040 MOD	**ATI I.D.:**	410529-2
CLIENT I.D.:	GAC1-EFF	**DATE SAMPLED:**	10/04/94
CLIENT:	PTI Environmental	**DATE RECEIVED:**	10/04/94
PROJECT #:	C4120308	**DATE EXTRACTED:**	10/10/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/11/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	ug/L

PARAMETER	RESULTS
TETRACHLOROPHENOL (TOTAL)	< 0.20
PENTACHLOROPHENOL	< 0.05

SURROGATE:

TRIBROMOPHENOL (20% - 100%)	52%

Analyst: BH 10/12/94

Reviewer: [illegible] 10/12/94

Analytical Technologies, Inc.

GC - SPIKE RESULTS

METHOD:	EPA 8040 M	**ATI I.D.:**	410529
CLIENT:	PTI Environmental	**QC ID:**	METHOD BLANK
PROJECT #:	C4120308	**DATE EXTRACTED:**	10/10/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/11/94
SAMPLE MATRIX:	WATER	**UNITS:**	ug/L

PARAMETER	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC	DUP SPIKED SAMPLE	DUP % REC	RPD
TETRACHLOROPHENOL (TOTAL)	< 0.20	2.00	1.47	74	1.48	74	1
PENTACHLOROPHENOL	< 0.05	0.50	0.65	130	0.63	126	3

CONTROL LIMITS

TETRACHLOROPHENOL (TOTAL)	20-138	35
PENTACHLOROPHENOL	20-138	35

SURROGATE	SPIKE	DUP SPIKE	LIMITS
TRIBROMOPHENOL	58	65	20-100

ANALYST: PA 10/12/94

REVIEWER: 10/12/94

Analytical Technologies, Inc.

GC - SPIKE RESULTS

METHOD:	EPA 8040 M	**ATI I.D.:**	410529
CLIENT:	PTI Environmental	**QC ID:**	410553-1
PROJECT #:	C4120308	**DATE EXTRACTED:**	10/10/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/11/94
SAMPLE MATRIX:	WATER	**UNITS:**	ug/L

PARAMETER	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC	DUP SPIKED SAMPLE	DUP % REC	RPD
TETRACHLOROPHENOL (TOTAL)	0.69	2.00	2.01	66	2.01	66	0
PENTACHLOROPHENOL	5.8	0.50	5.95	30	5.39	- 82 G	10

	CONTROL LIMITS	
TETRACHLOROPHENOL (TOTAL)	20-138	35
PENTACHLOROPHENOL	20-138	35

SURROGATE	SPIKE	DUP SPIKE	LIMITS
TRIBROMOPHENOL	69	66	20-100

G = OUT OF LIMITS DUE TO HIGH LEVELS OF TARGET ANALYTES IN SAMPLE.

ANALYST: BH 10/12/94

REVIEWER: 11 10/12/94

Analytical Technologies, Inc.

LIQUID CHROMATOGRAPHY RESULTS

METHOD:	8310	**ATI I.D.:**	410529-0
CLIENT I.D.:	METHOD BLANK	**DATE SAMPLED:**	NA
CLIENT:	PTI Environmental	**DATE RECEIVED:**	NA
PROJECT #:	C4120308	**DATE EXTRACTED:**	10/04/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/06/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	ug/L

PARAMETER	RESULTS	
NAPHTHALENE	<	0.5
ACENAPHTHYLENE	<	1.0
ACENAPHTHENE	<	0.5
FLUORENE	<	0.1
PHENANTHRENE	<	0.05
ANTHRACENE	<	0.05
FLUORANTHENE	<	0.1
PYRENE	<	0.1
BENZO(a)ANTHRACENE	<	0.1
CHRYSENE	<	0.1
BENZO(b)FLUORANTHENE	<	0.1
BENZO(k)FLUORANTHENE	<	0.1
BENZO(a)PYRENE	<	0.1
DIBENZO(a,h)ANTHRACENE	<	0.2
BENZO(g,h,i)PERYLENE	<	0.1
INDENO(1,2,3-cd)PYRENE	<	0.1

SURROGATE:

BIPHENYL (29%-120%) 55%

Analyst: 10-10-94

Reviewer: BH 10-10-94

Analytical**Technologies,**Inc.

LIQUID CHROMATOGRAPHY RESULTS

METHOD:	8310	**ATI I.D.:**	410529-2
CLIENT I.D.:	GAC1-EFF	**DATE SAMPLED:**	10/04/94
CLIENT:	PTI Environmental	**DATE RECEIVED:**	10/04/94
PROJECT #:	C4120308	**DATE EXTRACTED:**	10/04/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/06/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	ug/L

PARAMETER	RESULTS	
NAPHTHALENE	<	0.5
ACENAPHTHYLENE	<	1.0
ACENAPHTHENE	<	0.5
FLUORENE	<	0.1
PHENANTHRENE	<	0.05
ANTHRACENE	<	0.05
FLUORANTHENE	<	0.1
PYRENE	<	0.1
BENZO(a)ANTHRACENE	<	0.1
CHRYSENE	<	0.1
BENZO(b)FLUORANTHENE	<	0.1
BENZO(k)FLUORANTHENE	<	0.1
BENZO(a)PYRENE	<	0.1
DIBENZO(a,h)ANTHRACENE	<	0.2
BENZO(g,h,i)PERYLENE	<	0.1
INDENO(1,2,3-cd)PYRENE	<	0.1

SURROGATE:

BIPHENYL (29%-120%) 56%

Analyst: 10-10-94

Reviewer: 10-10-94

Analytical Technologies, Inc.

LIQUID CHROMATOGRAPHY BLANK SPIKE RESULTS

		ATI I.D.:	410529
METHOD:	8310	**QC SAMPLE:**	Method Blank
CLIENT:	PTI Environmental	**DATE EXTRACTED:**	10/04/94
PROJECT #:	C4120308	**DATE ANALYZED:**	10/06/94
PROJECT NAME:	McCormick & Baxter	**DILUTION FACTOR:**	1
SAMPLE MATRIX:	WATER	**UNITS:**	ug/L

PARAMETER		SAMPLE RESULT	SPIKE CONC.	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
ACENAPHTHYLENE	<	1.0	7.5	3.7	49	5.5	73	39
PHENANTHRENE	<	0.05	1.0	0.63	63	0.65	65	3
PYRENE	<	0.1	1.0	0.8	80	0.8	80	0
BENZO(k)FLUORANTHENE	<	0.1	1.0	0.8	80	0.8	80	0
DIBENZO(a,h)ANTHRACENE	<	0.2	1.0	0.9	90	0.9	90	0
SURROGATE:								
BIPHENYL (21% - 149%)				54%		55%		

CONTROL LIMITS

	% REC	RPD
ACENAPHTHYLENE	48-112	50
PHENANTHRENE	63-134	36
PYRENE	80-140	40
BENZO(k)FLUORANTHENE	64-120	36
DIBENZO(a,h)ANTHRACENE	53-191	40

Analyst: 10-10-94

Reviewer: 10-10-94

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	Method Blank	**ATI I.D.:**	410529-0
CLIENT:	PTI Environmental	**DATE SAMPLED:**	NA
PROJECT #:	C4120308	**DATE RECEIVED:**	NA
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	10/05,11/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	10/05,12/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ARSENIC	< 0.005	7060
CHROMIUM	< 0.01	6010
COPPER	< 0.01	6010
ZINC	< 0.01	6010

Analyst: [illegible] 10/12/94

Reviewer: [illegible] 10/31/94

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	GAC1-Inf	**ATI I.D.:**	410529-1
CLIENT:	PTI Environmental	**DATE SAMPLED:**	10/04/94
PROJECT #:	C4120308	**DATE RECEIVED:**	10/04/94
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	10/05,11/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	10/05,12/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ARSENIC	< 0.005	7060
CHROMIUM	< 0.01	6010
COPPER	0.03	6010
ZINC	0.19	6010

Analyst: [illegible] 10/12/94

Reviewer: [illegible] 10/31/94

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	GAC1-EFF	**ATI I.D.:**	410529-2
CLIENT:	PTI Environmental	**DATE SAMPLED:**	10/04/94
PROJECT #:	C4120308	**DATE RECEIVED:**	10/04/94
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	10/05,11/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	10/05,12/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ARSENIC	0.036	7060
CHROMIUM	< 0.01	6010
COPPER	< 0.01	6010
ZINC	0.06	6010

Analyst: [illegible] 10/12/94

Reviewer: [illegible] 10/31/94

Analytical Technologies, Inc.

METALS DUPLICATE RESULTS

METHOD:	6010 / 7000 series	**ATI I.D.:**	410529
CLIENT:	PTI Environmental	**QC SAMPLE:**	410529-1
PROJECT #:	C4120308	**DATE DIGESTED:**	10/05,11/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/05,12/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	DUPLICATE RESULT	RPD		RPD CONTROL LIMIT
ARSENIC	< 0.005	< 0.005	NA		20
CHROMIUM	< 0.01	< 0.01	NA		20
COPPER	0.03	0.02	40	*	20
ZINC	0.19	0.19	0		20

* Duplicate control limit not applicable. The sample is less than five times the MRL.

Analyst: 10/31/94

Reviewer: 10/31/94

Analytical Technologies, Inc.

METALS SPIKE RESULTS

METHOD:	6010 / 7000 series	**ATI I.D.:**	410529
CLIENT:	PTI Environmental	**QC SAMPLE:**	410529-1
PROJECT #:	C4120308	**DATE DIGESTED:**	10/05,11/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/05,12/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	SPIKE CONC	SPIKE RESULT	% RECOV	CONTROL LIMIT
ARSENIC	< 0.005	0.040	0.043	108	75-125%
CHROMIUM	< 0.01	1.00	0.92	92	75-125%
COPPER	0.03	1.00	0.92	89	75-125%
ZINC	0.19	1.00	1.10	91	75-125%

Analyst: [signature] 10/31/94

Reviewer: [signature] 10/31/94

Analytical Technologies, Inc.

TOTAL ORGANIC CARBON (TOC) RESULTS

METHOD:	EPA 415.1	**ATI I.D.:**	410529
CLIENT:	PTI Environmental	**DATE SAMPLED:**	10/04/94
PROJECT #:	C4120308	**DATE RECEIVED:**	10/04/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/13/94
SAMPLE MATRIX:	WATER	**UNITS:**	mg/L

ATI I.D.	CLIENT I.D.	MRL	RESULTS
410529-0	Method Blank	1	< 1
410529-2	GAC1-EFF	1	< 1

Analytical Technologies, Inc.

TOTAL ORGANIC CARBON (TOC) SPIKE RESULTS

TEST:	EPA 415.1	**ATI ACCESSION:**	410529
CLIENT:	PTI Environmental	**QC SAMPLE:**	IN HOUSE
PROJECT #:	C4120308	**DATE ANALYZED:**	10/13/94
PROJECT NAME:	McCormick & Baxter	**DILUTION FACTOR:**	1
SAMPLE MATRIX:	WATER	**UNITS:**	mg/L

PARAMETER	SAMPLE RESULT	SPIKE CONC.	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
TOC	< 1	6.7	6.2	93	5.9	88	6

CONTROL LIMITS

	%REC	RPD
TOC	50 - 129	30

Analytical**Technologies,**Inc.

INORGANIC CHRONICLE

CLIENT:	PTI Environmental	**ATI I.D.:**	410529
PROJECT #:	C4120308	**DATE SAMPLED:**	10/04/94
PROJECT NAME:	McCormick & Baxter	**DATE RECEIVED:**	10/04/94
SAMPLE MATRIX	WATER		

PARAMETER	EPA METHOD	DATE ANALYZED
OIL AND GREASE	413.1	10/09/94
SOLIDS, TOTAL SUSPENDED (TSS)	160.2	10/06/94

Analytical Technologies, Inc.

INORGANIC RESULTS

CLIENT I.D.:	Method Blank	**ATI I.D.:**	410529-0
CLIENT:	PTI Environmental	**DATE SAMPLED:**	N/A
PROJECT #:	C4120308	**DATE RECEIVED:**	N/A
PROJECT NAME:	McCormick & Baxter	**UNITS:**	mg/L
SAMPLE MATRIX:	WATER		

PARAMETER	EPA METHOD	RESULTS
OIL AND GREASE	413.1	< 1
SOLIDS, TOTAL SUSPENDED (TSS)	160.2	< 5

Analytical Technologies, Inc.

INORGANIC RESULTS

CLIENT I.D.:	GAC1-Inf	**ATI I.D.:**	410529-1
CLIENT:	PTI Environmental	**DATE SAMPLED:**	10/04/94
PROJECT #:	C4120308	**DATE RECEIVED:**	10/04/94
PROJECT NAME:	McCormick & Baxter	**UNITS:**	mg/L
SAMPLE MATRIX:	WATER		

PARAMETER	EPA METHOD	RESULTS
SOLIDS, TOTAL SUSPENDED (TSS)	160.2	18 .

Analytical Technologies, Inc.

INORGANIC RESULTS

CLIENT I.D.:	GAC1-Eff	**ATI I.D.:**	410529-2
CLIENT:	PTI Environmental	**DATE SAMPLED:**	10/04/94
PROJECT #:	C4120308	**DATE RECEIVED:**	10/04/94
PROJECT NAME:	McCormick & Baxter	**UNITS:**	mg/L
SAMPLE MATRIX:	WATER		

PARAMETER	EPA METHOD	RESULTS
OIL AND GREASE	413.1	< 1
SOLIDS, TOTAL SUSPENDED (TSS)	160.2	< 5

Analytical Technologies, Inc.

INORGANIC DUPLICATE RESULTS

CLIENT:	PTI Environmental	ATI I.D.:	410529
PROJECT #:	C4120308	QC SAMPLE:	410529-1
PROJECT NAME:	McCormick & Baxter	DATE SAMPLED:	10/04/94
SAMPLE MATRIX:	WATER	DATE RECEIVED:	10/04/94
		UNITS:	mg/L

PARAMETER	EPA METHOD	SAMPLE RESULT	DUP. SAMPLE RESULT	% RPD	CONTROL LIMITS % RPD
OIL AND GREASE *	413.1	3	3	0	20
SOLIDS, TOTAL SUSPENDED (TSS)	160.2	18	20	11	20

* QC performed on sample #410553-1

Analytical**Technologies,**Inc.

INORGANIC SPIKE RESULTS

CLIENT:	PTI Environmental	**ATI I.D.:**	410529
PROJECT #:	C4120308	**QC SAMPLE:**	410529-2
PROJECT NAME:	McCormick & Baxter	**DATE SAMPLED:**	10/04/94
SAMPLE MATRIX:	WATER	**DATE RECEIVED:**	10/04/94
		UNITS:	mg/L

PARAMETER	EPA METHOD	SAMPLE RESULT	SPIKE CONC.	SPIKE SAMPLE RESULT	% REC	CONTROL LIMITS % REC
OIL AND GREASE	413.1	< 1	50	49	98	75 - 125

PTI ENVIRONMENTAL SERVICES

CHAIN OF CUSTODY RECORD/ SAMPLE ANALYSIS REQUEST FORM

1217

Page 1 of 1

Project: (Name and Number) McCormick & Baxter (C4120308)

Samplers: (Signature)

Sampling Contact: Steve Barrett

Phone: 503-636-4338

Ship Samples to: ATI

Attn: Alan

Sample No.	Tag No.	Date '94	Time	Sample Matrix: Water	Sediment	Tissue	Soil	Air	Other	Concentration (L M H)	Composite or Grab	Analyses Requested: Metals Zn Hg, Cr, Cu	TSS	8270 8310	Oil & Grease	TOC	8040 TPH	Extra Container	Archive	Remarks
-1 GAC1-Inf	76758	10-4	1125	X									X							410529
GAC1-Inf	76757	10-4	1125	X								X								
GAC1-EFF	76759	10-4	1125	X								X								
GAC1-EFF	76760	10-4	1125	X									X							
GAC1-EFF	76761	10-4	1125	X										X						
GAC1-EFF	76762	10-4	1125	X										X				X		
-2 GAC1-EFF	76763	10-4	1125	X											X					
GAC1-EFF	76764	10-4	1125	X											X			X		
GAC1-EFF	76765	10-4	1125	X												X				
GAC1-EFF	76766	10-4	1234	X													X			
GAC1-EFF	76767	10-4	1234	X													X	X		

Method of Shipment: PTI courier

Condition of Samples Upon Receipt: good

Custody Seal Intact: Yes ☐ No ☐ None ☐ Broken by: _____

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time 10-4-94 1200

Relinquished by: _____ (Signature) Received by: _____ (Signature) ATI-POX Date/Time 10/4/94 1550

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time _____

Received for Lab by: _____ (Signature) Date/Time _____

RUSH

Distribution: Original and One Copy - Accompany Shipment; One Copy - Project File

FF Rev 1/91

Analytical **Technologies,** Inc.

17400 S.W. Upper Boones Ferry Road, Suite 270 Durham, OR. 97224
(503) 684-0447 (503) 620-0393 (FAX)

ATI I.D. 410553

October 12, 1994

Dan Peek
PTI Environmental Services
400 Kruse Way, Pl. #2-285
Lake Oswego, OR 97035

Project Name / Number: McCormick & Baxter / C4120308

Attention: Dan Peek

On October 6, 1994, Analytical Technologies, Inc. received two water samples for analysis for the above listed project. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (503)684-0447.

Vivian Fuchise
Project Manager

Alan J. Kleinschmidt
Laboratory Manager

AJK:alm
Enclosure

Analytical Technologies, Inc.

SAMPLE CROSS REFERENCE SHEET

CLIENT:	PTI Environmental	**ATI I.D.:**	410553
PROJECT #:	C4120308		
PROJECT NAME:	McCormick & Baxter	**MATRIX:**	WATER

ATI #	CLIENT DESCRIPTION	DATE SAMPLED
410553-1	GWC2-In	10/06/94
410553-2	GWC2-EFF	10/06/94

----------TOTALS----------

MATRIX	# SAMPLES
WATER	2

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ANALYTICAL SCHEDULE

CLIENT: PTI Environmental **ATI I.D.:** 410553
PROJECT #: C4120308
PROJECT NAME: McCormick & Baxter

ANALYSIS	TECHNIQUE	REFERENCE	LAB
PAHs	HPLC/UV/FLUOR	EPA 8310	PLD
Penta / Tetrachlorophenol	GC/ECD	EPA 8040	PLD
Oil & Grease	Gravimetric	EPA 413.1	PLD

PLD = ATI - Portland
R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical Technologies, Inc.

CASE NARRATIVE FOR EPA METHOD 8040M

PENTACHLOROPHENOL

ATI ACCESSION NUMBER 410553

A one liter aliquot of each aqueous sample was acidified to a pH of 2 and extracted with methylene chloride by liquid:liquid continuous method (EPA method 3520). The methylene chloride was reduced and exchanged to hexane. The phenols in the extract were derivatized using diazomethane into methyl ethers. Final volume was 5.0 ml.

The extracts were analyzed by gas chromatography using a electron capture detector (ECD). A RTX-35 megabore column was used for quantitation and a RTX-1701 megabore column, attached to a separate ECD, was used for confirmation. Five and six point calibration curves were generated and utilized for the analysis.

The sample used for the matrix spikes contained a high level of pentachlorophenol, approximately 10 times the amount spiked into the sample. The amount spiked in is insignificant to the amount in the sample. The blank spikes produced acceptable results.

BRIAN HENNES

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

METHOD:	8040 MOD	**ATI I.D.:**	410553-0
CLIENT I.D.:	METHOD BLANK	**DATE SAMPLED:**	NA
CLIENT:	PTI Environmental	**DATE RECEIVED:**	NA
PROJECT #:	C4120308	**DATE EXTRACTED:**	10/10/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/11/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	ug/L

PARAMETER	RESULTS	
TETRACHLOROPHENOL (TOTAL)	<	0.20
PENTACHLOROPHENOL	<	0.05

SURROGATE:

TRIBROMOPHENOL (20% - 100%)	57%

Analyst: BH 10/12/94

Reviewer: 10/12/94

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

METHOD:	8040 MOD	**ATI I.D.:**	410553-1
CLIENT I.D.:	GWC2-In	**DATE SAMPLED:**	10/06/94
CLIENT:	PTI Environmental	**DATE RECEIVED:**	10/06/94
PROJECT #:	C4120308	**DATE EXTRACTED:**	10/10/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/11/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	ug/L

PARAMETER	RESULTS
TETRACHLOROPHENOL (TOTAL)	0.69
PENTACHLOROPHENOL	5.8

SURROGATE:	
TRIBROMOPHENOL (20% - 100%)	83%

Analyst: BH 10/12/94

Reviewer: 10/12/94

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

METHOD:	8040 MOD	**ATI I.D.:**	410553-2
CLIENT I.D.:	GWC2-EFF	**DATE SAMPLED:**	10/06/94
CLIENT:	PTI Environmental	**DATE RECEIVED:**	10/06/94
PROJECT #:	C4120308	**DATE EXTRACTED:**	10/10/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/11/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	ug/L

PARAMETER	RESULTS	
TETRACHLOROPHENOL (TOTAL)	<	0.20
PENTACHLOROPHENOL	<	0.05

SURROGATE:

TRIBROMOPHENOL (20% - 100%)	65%

Analyst: BH 10/12/94

Reviewer: [illegible] 10/12/94

Analytical Technologies, Inc.

GC - SPIKE RESULTS

METHOD:	EPA 8040 M	**ATI I.D.:**	410553
CLIENT:	PTI Environmental	**QC ID:**	410553-1
PROJECT #:	C4120308	**DATE EXTRACTED:**	10/10/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/11/94
SAMPLE MATRIX:	WATER	**UNITS:**	ug/L

PARAMETER	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC	DUP SPIKED SAMPLE	DUP % REC	RPD
TETRACHLOROPHENOL (TOTAL)	0.69	2.00	2.01	66	2.01	66	0
PENTACHLOROPHENOL	5.8	0.50	5.95	30	5.39	- 82 G	10

CONTROL LIMITS

TETRACHLOROPHENOL (TOTAL)	20-138	35
PENTACHLOROPHENOL	20-138	35

SURROGATE	SPIKE	DUP SPIKE	LIMITS
TRIBROMOPHENOL	69	66	20-100

G = OUT OF LIMITS DUE TO HIGH LEVELS OF TARGET ANALYTES IN SAMPLE.

ANALYST: JSH 10/12/94

REVIEWER: 10/12/94

Analytical Technologies, Inc.

GC - SPIKE RESULTS

METHOD:	EPA 8040 M	**ATI I.D.:**	410553
CLIENT:	PTI Environmental	**QC ID:**	METHOD BLANK
PROJECT #:	C4120308	**DATE EXTRACTED:**	10/10/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/11/94
SAMPLE MATRIX:	WATER	**UNITS:**	ug/L

PARAMETER	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC	DUP SPIKED SAMPLE	DUP % REC	RPD
TETRACHLOROPHENOL (TOTAL)	< 0.20	2.00	1.47	74	1.48	74	1
PENTACHLOROPHENOL	< 0.05	0.50	0.65	130	0.63	126	3

CONTROL LIMITS

TETRACHLOROPHENOL (TOTAL)	20-138	35
PENTACHLOROPHENOL	20-138	35

SURROGATE	SPIKE	DUP SPIKE	LIMITS
TRIBROMOPHENOL	58	65	20-100

ANALYST: BH 10/12/94

REVIEWER: 10/12/94

Analytical **Technologies,** Inc.

LIQUID CHROMATOGRAPHY RESULTS

METHOD:	8310	**ATI I.D.:**	410553-0
CLIENT I.D.:	METHOD BLANK	**DATE SAMPLED:**	10/06/94
CLIENT:	PTI Environmental	**DATE RECEIVED:**	10/06/94
PROJECT #:	C4120308	**DATE EXTRACTED:**	10/07/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/10/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	ug/L

PARAMETER	RESULTS	
NAPHTHALENE	<	0.5
ACENAPHTHYLENE	<	1.0
ACENAPHTHENE	<	0.5
FLUORENE	<	0.1
PHENANTHRENE	<	0.05
ANTHRACENE	<	0.05
FLUORANTHENE	<	0.1
PYRENE	<	0.1
BENZO(a)ANTHRACENE	<	0.1
CHRYSENE	<	0.1
BENZO(b)FLUORANTHENE	<	0.1
BENZO(k)FLUORANTHENE	<	0.1
BENZO(a)PYRENE	<	0.1
DIBENZO(a,h)ANTHRACENE	<	0.2
BENZO(g,h,i)PERYLENE	<	0.1
INDENO(1,2,3-cd)PYRENE	<	0.1

SURROGATE:	
BIPHENYL (29%-120%)	64%

Analyst: DH 10/11/94

Reviewer: [illegible] 10/11/94

Analytical Technologies, Inc.

LIQUID CHROMATOGRAPHY RESULTS

METHOD:	8310	**ATI I.D.:**	410553-1
CLIENT I.D.:	GWC2-In	**DATE SAMPLED:**	10/06/94
CLIENT:	PTI Environmental	**DATE RECEIVED:**	10/06/94
PROJECT #:	C4120308	**DATE EXTRACTED:**	10/07/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/10/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	ug/L

PARAMETER		RESULTS
NAPHTHALENE		370 D
ACENAPHTHYLENE		19
ACENAPHTHENE		150 D
FLUORENE		70 D
PHENANTHRENE		50 D
ANTHRACENE		5.0
FLUORANTHENE		5.8
PYRENE		1.8
BENZO(a)ANTHRACENE		0.2
CHRYSENE	<	0.1
BENZO(b)FLUORANTHENE	<	0.1
BENZO(k)FLUORANTHENE	<	0.1
BENZO(a)PYRENE	<	0.1
DIBENZO(a,h)ANTHRACENE	<	0.2
BENZO(g,h,i)PERYLENE	<	0.1
INDENO(1,2,3-cd)PYRENE	<	0.1
SURROGATE:		
BIPHENYL (29%-120%)		57%

D = VALUE FROM A 10 FOLD DILUTION ANALYZED 10/11/94

Analyst: DH 10/11/94

Reviewer: 10/11/94

Analytical Technologies, Inc.

LIQUID CHROMATOGRAPHY RESULTS

METHOD:	8310	**ATI I.D.:**	410553-2
CLIENT I.D.:	GWC2-EFF	**DATE SAMPLED:**	10/06/94
CLIENT:	PTI Environmental	**DATE RECEIVED:**	10/06/94
PROJECT #:	C4120308	**DATE EXTRACTED:**	10/07/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/10/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	ug/L

PARAMETER	RESULTS	
NAPHTHALENE	<	0.5
ACENAPHTHYLENE	<	1.0
ACENAPHTHENE	<	0.5
FLUORENE	<	0.1
PHENANTHRENE	<	0.05
ANTHRACENE	<	0.05
FLUORANTHENE	<	0.1
PYRENE	<	0.1
BENZO(a)ANTHRACENE	<	0.1
CHRYSENE	<	0.1
BENZO(b)FLUORANTHENE	<	0.1
BENZO(k)FLUORANTHENE	<	0.1
BENZO(a)PYRENE	<	0.1
DIBENZO(a,h)ANTHRACENE	<	0.2
BENZO(g,h,i)PERYLENE	<	0.1
INDENO(1,2,3-cd)PYRENE	<	0.1

SURROGATE:

BIPHENYL (29%-120%) 81%

Analyst: BH 10/11/94

Reviewer: JJ 10/11/94

Analytical Technologies, Inc.

LIQUID CHROMATOGRAPHY BLANK SPIKE RESULTS

		ATI I.D.:	410553
METHOD:	8310	**QC SAMPLE:**	Method Blank
CLIENT:	PTI Environmental	**DATE EXTRACTED:**	10/07/94
PROJECT #:	C4120308	**DATE ANALYZED:**	10/11/94
PROJECT NAME:	McCormick & Baxter	**DILUTION FACTOR:**	1
SAMPLE MATRIX:	WATER	**UNITS:**	ug/L

PARAMETER		SAMPLE RESULT	SPIKE CONC.	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
ACENAPHTHYLENE	<	1.0	10.0	5.1	51	5.6	56	9
PHENANTHRENE	<	0.05	1.0	0.84	84	0.87	87	4
PYRENE	<	0.1	1.0	0.9	90	1.0	100	11
BENZO(k)FLUORANTHENE	<	0.1	1.0	0.8	80	0.9	90	12
DIBENZO(a,h)ANTHRACENE	<	0.2	1.0	1.0	100	0.9	90	11
SURROGATE:								
BIPHENYL (21% - 149%)				80%		84%		

CONTROL LIMITS

	% REC	RPD
ACENAPHTHYLENE	48-112	50
PHENANTHRENE	63-134	36
PYRENE	80-140	40
BENZO(k)FLUORANTHENE	64-120	36
DIBENZO(a,h)ANTHRACENE	53-191	40

Analyst: 10/11/94

Reviewer: 10/11/94

Analytical Technologies, Inc.

INORGANIC CHRONICLE

CLIENT:	PTI Environmental	**ATI I.D.:**	410553
PROJECT #:	C4120308	**DATE SAMPLED:**	10/06/94
PROJECT NAME:	McCormick & Baxter	**DATE RECEIVED:**	10/06/94
SAMPLE MATRIX	WATER		

PARAMETER	EPA METHOD	DATE ANALYZED
OIL AND GREASE	413.1	10/09/94

Analytical **Technologies,** Inc.

INORGANIC RESULTS

CLIENT I.D.:	Method Blank	**ATI I.D.:**	410553-0
CLIENT:	PTI Environmental	**DATE SAMPLED:**	N/A
PROJECT #:	C4120308	**DATE RECEIVED:**	N/A
PROJECT NAME:	McCormick & Baxter	**UNITS:**	mg/L
SAMPLE MATRIX:	WATER		

PARAMETER	EPA METHOD	RESULTS
OIL AND GREASE	413.1	< 1

Analytical Technologies, Inc.

INORGANIC RESULTS

CLIENT I.D.:	GWC2-In	**ATI I.D.:**	410553-1
CLIENT:	PTI Environmental	**DATE SAMPLED:**	10/06/94
PROJECT #:	C4120308	**DATE RECEIVED:**	10/06/94
PROJECT NAME:	McCormick & Baxter	**UNITS:**	mg/L
SAMPLE MATRIX:	WATER		

PARAMETER	EPA METHOD	RESULTS
OIL AND GREASE	413.1	3

Analytical Technologies, Inc.

INORGANIC RESULTS

CLIENT I.D.:	GWC2-Eff	**ATI I.D.:**	410553-2
CLIENT:	PTI Environmental	**DATE SAMPLED:**	10/06/94
PROJECT #:	C4120308	**DATE RECEIVED:**	10/06/94
PROJECT NAME:	McCormick & Baxter	**UNITS:**	mg/L
SAMPLE MATRIX:	WATER		

PARAMETER	EPA METHOD	RESULTS
OIL AND GREASE	413.1	< 1

Analytical**Technologies,**Inc.

INORGANIC DUPLICATE RESULTS

CLIENT:	PTI Environmental	**ATI I.D.:**	410553
PROJECT #:	C4120308	**QC SAMPLE:**	410553-1
PROJECT NAME:	McCormick & Baxter	**DATE SAMPLED:**	10/06/94
SAMPLE MATRIX:	WATER	**DATE RECEIVED:**	10/06/94
		UNITS:	mg/L

PARAMETER	EPA METHOD	SAMPLE RESULT	DUP. SAMPLE RESULT	% RPD	CONTROL LIMITS % RPD
OIL AND GREASE	413.1	3	3	0	20

Analytical Technologies, Inc.

INORGANIC SPIKE RESULTS

CLIENT:	PTI Environmental	**ATI I.D.:**	410553
PROJECT #:	C4120308	**QC SAMPLE:**	410529-2
PROJECT NAME:	McCormick & Baxter	**DATE SAMPLED:**	N/A
SAMPLE MATRIX:	WATER	**DATE RECEIVED:**	N/A
		UNITS:	mg/L

PARAMETER	EPA METHOD	SAMPLE RESULT	SPIKE CONC.	SPIKE SAMPLE RESULT	% REC	CONTROL LIMITS % REC
OIL AND GREASE	413.1	< 1	50	49	98	75 - 125

PTI ENVIRONMENTAL SERVICES

CHAIN OF CUSTODY RECORD/ SAMPLE ANALYSIS REQUEST FORM

Project: (Name and Number) McCormick & Baxter C4120308

Samplers: (Signature) John Swan

Sampling Contact: Steve Burtt
Phone: 503-636-4338
Ship Samples to: ATI
Attn:

410553

Sample No.	Tag No.	Date '94	Time	Water	Sediment	Tissue	Soil	Air	Other	Concentration (L M H)	Composite or Grab	8310	8040 Penta	Oil & Grease				Extra Container	Archive	Remarks
GWC2-In	76789	10-6	1530	X						L		X								
GWC2-In	76790	10-6	1530	X								X						X		
GWC2-In	76791	10-6	1530	X									X							8310 & O&G due Mon, 10/10/94
GWC2-In	76792	10-6	1530	X									X					X		8040 - 1 week
GWC2-In	76793	10-6	1530	X										X						
GWC2-In	76794	10-6	1530	X										X				X		RUSH
GWC2-EFF	76782	10-6	1120	X								X								
GWC2-EFF	76783	10-6	1120	X								X						X		
GWC2-EFF	76785	10-6	1120	X										X						
GWC2-EFF	76786	10-6	1120	X										X				X		
GWC2-EFF	76787	10-6	1418	X									X							
GWC2-EFF	76788	10-6	1418	X									X					X		

(Rows 76789–76794 bracketed "-1"; rows 76782–76788 bracketed "-2")

Method of Shipment: PTI courier

Condition of Samples Upon Receipt: good/cold

Custody Seal Intact: Yes ☒ No ☐ None ☐ Broken by: [signature]

Relinquished by: John Swan (Signature) Received by: Carp C. Peters (Signature) Date/Time 10/6/94 1545

Relinquished by: Carp C. Peters (Signature) Received by: [signature] (Signature) Date/Time 10/6/94 1625

Relinquished by: ______ (Signature) Received by Mobile Lab for Field Analysis: ______ (Signature) Date/Time ______

Received for Lab by: ______ (Signature) Date/Time ______

Distribution: Original and One Copy - Accompany Shipment; One Copy - Project File

Analytical **Technologies,** Inc.

17400 S.W. Upper Boones Ferry Road, Suite 270 Durham, OR. 97224
(503) 684-0447 (503) 620-0393 (FAX)

RECEIVED
OCT 31 1994
PTI

ATI I.D. 410662

October 26, 1994

Dan Peek
PTI Environmental Services
400 Kruse Way, Pl. #2-285
Lake Oswego, OR 97035

Project Name / Number: McCormick & Baxter / C4120308

Attention: Dan Peek

On October 18, 1994, Analytical Technologies, Inc. received one water sample for analysis for the above listed project. The sample was analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (503)684-0447.

Vivian Fuchise
Project Manager

Alan J. Kleinschmidt
Laboratory Manager

AJK:alm
Enclosure

Analytical Technologies, Inc.

SAMPLE CROSS REFERENCE SHEET

CLIENT:	PTI Environmental	**ATI I.D.:**	410662
PROJECT #:	C4120308		
PROJECT NAME:	McCormick & Baxter	**MATRIX:**	WATER

ATI #	CLIENT DESCRIPTION	DATE SAMPLED
410662-1	BT3-1	10/17/94

----------TOTALS----------

MATRIX	# SAMPLES
WATER	1

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ANALYTICAL SCHEDULE

CLIENT: PTI Environmental **ATI I.D.:** 410662
PROJECT #: C4120308
PROJECT NAME: McCormick & Baxter

ANALYSIS	TECHNIQUE	REFERENCE	LAB
Penta & Tetrachlorophenol	GC/ECD	EPA 8040	PLD
PAHs	HPLC/UV/FLUOR	EPA 8310	PLD
Arsenic	AA/GF	EPA 7060	PLD
Chromium	ICAP	EPA 6010	PLD
Zinc	ICAP	EPA 6010	PLD
Copper	ICAP	EPA 6010	PLD
Hexavalent Chromium	Colorimetric	EPA 7196	PLD

PLD = ATI - Portland
R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

METHOD:	8040 MOD	**ATI I.D.:**	410662-0
CLIENT I.D.:	METHOD BLANK	**DATE SAMPLED:**	NA
CLIENT:	PTI Environmental	**DATE RECEIVED:**	NA
PROJECT #:	C4120308	**DATE EXTRACTED:**	10/18/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/24/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	ug/L

PARAMETER	RESULTS	
TETRACHLOROPHENOL (TOTAL)	<	0.20
PENTACHLOROPHENOL	<	0.05

SURROGATE:	
TRIBROMOPHENOL (20% - 100%)	77%

Analyst: KH 10-25-94

Reviewer: [illegible] 10-25-94

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

METHOD:	8040 MOD	**ATI I.D.:**	410662-1
CLIENT I.D.:	BT3-1	**DATE SAMPLED:**	10/17/94
CLIENT:	PTI Environmental	**DATE RECEIVED:**	10/18/94
PROJECT #:	C4120308	**DATE EXTRACTED:**	10/18/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/24/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	ug/L

PARAMETER	RESULTS
TETRACHLOROPHENOL (TOTAL)	< 0.20
PENTACHLOROPHENOL	0.16

SURROGATE:

TRIBROMOPHENOL (20% - 100%)	68%

Analyst: BH 10-25-94

Reviewer: 11 10-25-94

Analytical Technologies, Inc.

GC - SPIKE RESULTS

METHOD:	EPA 8040 M	**ATI I.D.:**	410553
CLIENT:	PTI Environmental	**QC ID:**	METHOD BLANK
PROJECT #:	C4120308	**DATE EXTRACTED:**	10/18/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/24/94
SAMPLE MATRIX:	WATER	**UNITS:**	ug/L

PARAMETER	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC	DUP SPIKED SAMPLE	DUP % REC	RPD
TETRACHLOROPHENOL (TOTAL)	< 0.20	2.00	1.32	66	1.84	92	33
PENTACHLOROPHENOL	< 0.05	0.50	0.46	92	0.65	130	34

CONTROL LIMITS

TETRACHLOROPHENOL (TOTAL)	20-138	35
PENTACHLOROPHENOL	20-138	35

SURROGATE	SPIKE	DUP SPIKE	LIMITS
TRIBROMOPHENOL	51	69	20-100

ANALYST BH 10-25-94

REVIEWER: 10/25/94

Analytical Technologies, Inc.

LIQUID CHROMATOGRAPHY RESULTS

METHOD:	8310	**ATI I.D.:**	410662-0
CLIENT I.D.:	METHOD BLANK	**DATE SAMPLED:**	NA
CLIENT:	PTI Environmental	**DATE RECEIVED:**	NA
PROJECT #:	C4120308	**DATE EXTRACTED:**	10/24/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/25/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	ug/L

PARAMETER	RESULTS	
NAPHTHALENE	<	0.5
ACENAPHTHYLENE	<	1.0
ACENAPHTHENE	<	0.5
FLUORENE	<	0.1
PHENANTHRENE	<	0.05
ANTHRACENE	<	0.05
FLUORANTHENE	<	0.1
PYRENE	<	0.1
BENZO(a)ANTHRACENE	<	0.1
CHRYSENE	<	0.1
BENZO(b)FLUORANTHENE	<	0.1
BENZO(k)FLUORANTHENE	<	0.1
BENZO(a)PYRENE	<	0.1
DIBENZO(a,h)ANTHRACENE	<	0.2
BENZO(g,h,i)PERYLENE	<	0.1
INDENO(1,2,3-cd)PYRENE	<	0.1

SURROGATE:	
BIPHENYL (29%-120%)	69%

Analyst: BH 10-25-94

Reviewer: 10/25/94

Analytical Technologies, Inc.

LIQUID CHROMATOGRAPHY RESULTS

METHOD:	8310	**ATI I.D.:**	410662-1
CLIENT I.D.:	BT3-1	**DATE SAMPLED:**	10/17/94
CLIENT:	PTI Environmental	**DATE RECEIVED:**	10/18/94
PROJECT #:	C4120308	**DATE EXTRACTED:**	10/24/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/25/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	ug/L

PARAMETER	RESULTS	
NAPHTHALENE	<	0.5
ACENAPHTHYLENE	<	1.0
ACENAPHTHENE	<	0.5
FLUORENE	<	0.1
PHENANTHRENE	<	0.05
ANTHRACENE	<	0.05
FLUORANTHENE	<	0.1
PYRENE	<	0.1
BENZO(a)ANTHRACENE	<	0.1
CHRYSENE	<	0.1
BENZO(b)FLUORANTHENE	<	0.1
BENZO(k)FLUORANTHENE	<	0.1
BENZO(a)PYRENE	<	0.1
DIBENZO(a,h)ANTHRACENE	<	0.2
BENZO(g,h,i)PERYLENE	<	0.1
INDENO(1,2,3-cd)PYRENE	<	0.1

SURROGATE:

BIPHENYL (29%-120%) 65%

Analyst: 10-25-94

Reviewer: BH 10-25-94

Analytical Technologies, Inc.

LIQUID CHROMATOGRAPHY BLANK SPIKE RESULTS

		ATI I.D.:	410662
METHOD:	8310	**QC SAMPLE:**	Method Blank
CLIENT:	PTI Environmental	**DATE EXTRACTED:**	10/24/94
PROJECT #:	C4120308	**DATE ANALYZED:**	10/25/94
PROJECT NAME:	McCormick & Baxter	**DILUTION FACTOR:**	1
SAMPLE MATRIX:	WATER	**UNITS:**	ug/L

PARAMETER		SAMPLE RESULT	SPIKE CONC.	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
ACENAPHTHYLENE	<	1.0	10.0	6.1	61	6.7	67	9
PHENANTHRENE	<	0.05	1.0	0.70	70	0.77	77	10
PYRENE	<	0.1	1.0	0.9	90	1.0	100	11
BENZO(k)FLUORANTHENE	<	0.1	1.0	0.7	70	0.8	80	13
DIBENZO(a,h)ANTHRACENE	<	0.2	1.0	0.8	80	0.9	90	12
SURROGATE:								
BIPHENYL (21% - 149%)				70%		72%		

CONTROL LIMITS

	% REC	RPD
ACENAPHTHYLENE	48-112	50
PHENANTHRENE	63-134	36
PYRENE	80-140	40
BENZO(k)FLUORANTHENE	64-120	36
DIBENZO(a,h)ANTHRACENE	53-191	40

Analyst: 10/25/94

Reviewer: 10-25-94

Analytical **Technologies,** Inc.

METALS RESULTS

CLIENT I.D.:	Method Blank	**ATI I.D.:**	410662-0
CLIENT:	PTI Environmental	**DATE SAMPLED:**	NA
PROJECT #:	C4120308	**DATE RECEIVED:**	NA
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	10/24/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	10/25/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ARSENIC	< 0.005	7060
CHROMIUM	< 0.01	6010
COPPER	< 0.01	6010
ZINC	< 0.01	6010

Analyst: B.T. 10/25/94

Reviewer: [illegible] 10/26/94

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	BT3-1	**ATI I.D.:**	410662-1
CLIENT:	PTI Environmental	**DATE SAMPLED:**	10/17/94
PROJECT #:	C4120308	**DATE RECEIVED:**	10/18/94
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	10/24/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	10/25/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ARSENIC	< 0.005	7060
CHROMIUM	< 0.01	6010
COPPER	< 0.01	6010
ZINC	0.04	6010

Analyst: [illegible] 10/25/94

Reviewer: [illegible] 10/26/94

Analytical Technologies, Inc.

METALS DUPLICATE RESULTS

METHOD:	6010 / 7000 series	**ATI I.D.:**	410662
CLIENT:	PTI Environmental	**QC SAMPLE:**	410663-1
PROJECT #:	C4120308	**DATE DIGESTED:**	10/24/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/25/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	DUPLICATE RESULT	RPD	RPD CONTROL LIMIT
ARSENIC	< 0.005	< 0.005	NA	20
CHROMIUM	< 0.01	< 0.01	NA	20
COPPER	< 0.01	< 0.01	NA	20
ZINC	< 0.01	< 0.01	NA	20

Analyst: [illegible] 10/26/94

Reviewer: [illegible] 10/26/94

Analytical Technologies, Inc.

METALS SPIKE RESULTS

METHOD:	6010 / 7000 series	**ATI I.D.:**	410662
CLIENT:	PTI Environmental	**QC SAMPLE:**	410663-1
PROJECT #:	C4120308	**DATE DIGESTED:**	10/24/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/25/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	SPIKE CONC	SPIKE RESULT	% RECOV	CONTROL LIMIT
ARSENIC	< 0.005	0.040	0.050	125	75-125%
CHROMIUM	< 0.01	1.00	0.95	95	75-125%
COPPER	< 0.01	1.00	0.92	92	75-125%
ZINC	< 0.01	1.00	0.88	88	75-125%

Analyst: N.T. 10/26/94

Reviewer: [illegible] 10/26/94

Analytical Technologies, Inc.

INORGANIC RESULTS

CLIENT I.D.:	Method Blank	**ATI I.D.:**	410662-0
CLIENT:	PTI Environmental	**DATE SAMPLED:**	N/A
PROJECT #:	C4120308	**DATE RECEIVED:**	N/A
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/18/94
SAMPLE MATRIX:	WATER	**UNITS:**	mg/L

PARAMETER	EPA METHOD	RESULTS
CHROMIUM, HEXAVALENT	7196	< 0.01

Analytical Technologies, Inc.

INORGANIC RESULTS

CLIENT I.D.:	BT3-1	**ATI I.D.:**	410662-1
CLIENT:	PTI Environmental	**DATE SAMPLED:**	10/17/94
PROJECT #:	C4120308	**DATE RECEIVED:**	10/18/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	10/18/94
SAMPLE MATRIX:	WATER	**UNITS:**	mg/L

PARAMETER	EPA METHOD	RESULTS
CHROMIUM, HEXAVALENT	7196	< 0.01

Analytical Technologies, Inc.

INORGANIC DUPLICATE RESULTS

CLIENT:	PTI Environmental	ATI I.D.:	410662
PROJECT #:	C4120308	QC SAMPLE:	410662-1
PROJECT NAME:	McCormick & Baxter	DATE SAMPLED:	10/17/94
SAMPLE MATRIX:	WATER	DATE RECEIVED:	10/18/94
		UNITS:	mg/L

PARAMETER	EPA METHOD	SAMPLE RESULT	DUP. SAMPLE RESULT	% RPD	CONTROL LIMITS % RPD
CHROMIUM, HEXAVALENT	7196	< 0.01	< 0.01	N/A	20

Analytical Technologies, Inc.

INORGANIC SPIKE RESULTS

CLIENT:	PTI Environmental	**ATI I.D.:**	410662
PROJECT #:	C4120308	**QC SAMPLE:**	410662-1
PROJECT NAME:	McCormick & Baxter	**DATE SAMPLED:**	10/17/94
SAMPLE MATRIX:	WATER	**DATE RECEIVED:**	10/18/94
		UNITS:	mg/L

PARAMETER	EPA METHOD	SAMPLE RESULT	SPIKE CONC.	SPIKE SAMPLE RESULT	% REC	CONTROL LIMITS % REC
CHROMIUM, HEXAVALENT	7196	< 0.01	0.20	0.21	105	75 - 125

PTI ENVIRONMENTAL SERVICES

CHAIN OF CUSTODY RECORD/ SAMPLE ANALYSIS REQUEST FORM

1221

Page __ of __

Project: (Name and Number) McCormick & BAXTER C4120308

Samplers: (Signature) John Swan

Sampling Contact: Steve Barnett

Phone: 503-636-4338

Ship Samples to: _____

Attn: _____

Sample No.	Tag No.	Date	Time	Sample Matrix: Water	Sediment	Tissue	Soil	Air	Other	Concentration (L M H)	Composite or Grab	Analyses Requested: 8310	8040 PCBs by GC	Metals As, Cr, Cu, Zn	Hex Cr			Extra Container	Archive
410662		10-17-94																	
BT3-1	76795	10-17	1615	X								X							
BT3-1	76796	10-17	1615	X								X						X	
BT3-1	76797	10-17	1615	X									X						
BT3-1	76798	10-17	1615	X									X					X	
BT3-1	76799	10-17	1615	X										X					
BT3-1	76800	10-17	1615	X											X				

Remarks: -1

RUSH

Due 10/25/94

Method of Shipment: Hand del.

Condition of Samples Upon Receipt: cold/good

Custody Seal Intact: Yes ☐ No ☐ None ☐ Broken by: _____

Relinquished by: John Swan (Signature) Received by: _____ (Signature) Date/Time 10/18/94 820 ~~10-17-94 1700~~

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time _____

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time _____

Received for Lab by: _____ (Signature) Date/Time _____

Distribution: Original and One Copy - Accompany Shipment; One Copy - Project File

FF Rev 1/91

Analytical **Technologies,** Inc.

17400 S.W. Upper Boones Ferry Road, Suite 270 Durham, OR. 97224
(503) 684-0447 (503) 620-0393 (FAX)

ATI I.D. 411524

RECEIVED
NOV 28 1994
PTI

November 14, 1994

Dan Peek
PTI Environmental Services
400 Kruse Way, Pl. #2-285
Lake Oswego, OR 97035

Project Name / Number: McCormick & Baxter / C4120308

Attention: Dan Peek

On November 3, 1994, Analytical Technologies, Inc. received one water sample for analysis for the above listed project. The sample was analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (503)684-0447.

for
Vivian Fuchise
Project Manager

Alan J. Kleinschmidt
Laboratory Manager

AJK:alm
Enclosure

Analytical Technologies, Inc.

SAMPLE CROSS REFERENCE SHEET

CLIENT:	PTI Environmental	**ATI I.D.:**	411524
PROJECT #:	C4120308		
PROJECT NAME:	McCormick & Baxter	**MATRIX:**	WATER

ATI #	CLIENT DESCRIPTION	DATE SAMPLED
411524-1	BT3-2	11/03/94

----------TOTALS----------

MATRIX	# SAMPLES
WATER	1

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ANALYTICAL SCHEDULE

CLIENT: PTI Environmental **ATI I.D.:** 411524
PROJECT #: C4120308
PROJECT NAME: McCormick & Baxter

ANALYSIS	TECHNIQUE	REFERENCE	LAB
PAHs	HPLC/UV/FLUOR	EPA 8310	PLD
Penta & Tetrachlorophenols	GC/ECD	EPA 8040	PLD
Arsenic	AA/GF	EPA 7060	PLD
Chromium	ICAP	EPA 6010	PLD
Copper	ICAP	EPA 6010	PLD
Zinc	ICAP	EPA 6010	PLD
Hexavalent Chromium	Colorimetric	EPA 7196	PLD

PLD = ATI - Portland
R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

METHOD:	8040 MOD	**ATI I.D.:**	411524-0
CLIENT I.D.:	METHOD BLANK	**DATE SAMPLED:**	NA
CLIENT:	PTI Environmental	**DATE RECEIVED:**	NA
PROJECT #:	C4120308	**DATE EXTRACTED:**	11/08/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	11/09/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	ug/L

PARAMETER	RESULTS	
TETRACHLOROPHENOL (TOTAL)	<	0.20
PENTACHLOROPHENOL	<	0.05

SURROGATE:

TRIBROMOPHENOL (20% - 100%)	59%

Analyst: 11/10/94

Reviewer: 11/10/94

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

METHOD:	8040 MOD	**ATI I.D.:**	411524-1
CLIENT I.D.:	BT3-2	**DATE SAMPLED:**	11/03/94
CLIENT:	PTI Environmental	**DATE RECEIVED:**	11/03/94
PROJECT #:	C4120308	**DATE EXTRACTED:**	11/08/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	11/09/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	ug/L

PARAMETER	RESULTS
TETRACHLOROPHENOL (TOTAL)	< 0.20
PENTACHLOROPHENOL	< 0.05

SURROGATE:

TRIBROMOPHENOL (20% - 100%)	65%

Analyst: [redacted] 11/10/94

Reviewer: GH 11/10/94

Analytical Technologies, Inc.

GC - SPIKE RESULTS

METHOD:	EPA 8040 M	**ATI I.D.:**	411524
CLIENT:	PTI Environmental	**QC ID:**	METHOD BLANK
PROJECT #:	C4120308	**DATE EXTRACTED:**	11/08/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	11/09/94
SAMPLE MATRIX:	WATER	**UNITS:**	ug/L

PARAMETER	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC	DUP SPIKED SAMPLE	DUP % REC	RPD
TETRACHLOROPHENOL (TOTAL)	< 0.20	2.00	1.71	86	1.47	74	15
PENTACHLOROPHENOL	< 0.05	0.50	0.62	124	0.58	116	7

CONTROL LIMITS

TETRACHLOROPHENOL (TOTAL)	20-138	35
PENTACHLOROPHENOL	20-138	35

SURROGATE	SPIKE	DUP SPIKE	LIMITS
TRIBROMOPHENOL	67	61	20-100

ANALYST: 11/10/94

REVIEWER: 11/10/94

Analytical Technologies, Inc.

LIQUID CHROMATOGRAPHY RESULTS

METHOD:	8310	**ATI I.D.:**	411524-0
CLIENT I.D.:	METHOD BLANK	**DATE SAMPLED:**	NA
CLIENT:	PTI Environmental	**DATE RECEIVED:**	NA
PROJECT #:	C4120308	**DATE EXTRACTED:**	11/07/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	11/10/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	ug/L

PARAMETER	RESULTS	
NAPHTHALENE	<	0.5
ACENAPHTHYLENE	<	1.0
ACENAPHTHENE	<	0.5
FLUORENE	<	0.1
PHENANTHRENE	<	0.05
ANTHRACENE	<	0.05
FLUORANTHENE	<	0.1
PYRENE	<	0.1
BENZO(a)ANTHRACENE	<	0.1
CHRYSENE	<	0.1
BENZO(b)FLUORANTHENE	<	0.1
BENZO(k)FLUORANTHENE	<	0.1
BENZO(a)PYRENE	<	0.1
DIBENZO(a,h)ANTHRACENE	<	0.2
BENZO(g,h,i)PERYLENE	<	0.1
INDENO(1,2,3-cd)PYRENE	<	0.1

SURROGATE:	
BIPHENYL (29%-120%)	77%

Analyst: 11/10/94

Reviewer: BH 11/10/94

Analytical **Technologies,** Inc.

LIQUID CHROMATOGRAPHY RESULTS

METHOD:	8310	**ATI I.D.:**	411524-1
CLIENT I.D.:	BT3-2	**DATE SAMPLED:**	11/03/94
CLIENT:	PTI Environmental	**DATE RECEIVED:**	11/03/94
PROJECT #:	C4120308	**DATE EXTRACTED:**	11/07/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	11/10/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	ug/L

PARAMETER	RESULTS	
NAPHTHALENE	<	0.5
ACENAPHTHYLENE	<	1.0
ACENAPHTHENE	<	0.5
FLUORENE	<	0.1
PHENANTHRENE	<	0.05
ANTHRACENE	<	0.05
FLUORANTHENE	<	0.1
PYRENE	<	0.1
BENZO(a)ANTHRACENE	<	0.1
CHRYSENE	<	0.1
BENZO(b)FLUORANTHENE	<	0.1
BENZO(k)FLUORANTHENE	<	0.1
BENZO(a)PYRENE	<	0.1
DIBENZO(a,h)ANTHRACENE	<	0.2
BENZO(g,h,i)PERYLENE	<	0.1
INDENO(1,2,3-cd)PYRENE	<	0.1

SURROGATE:	
BIPHENYL (29%-120%)	75%

Analyst: 11/10/94

Reviewer: 11/10/94

Analytical Technologies, Inc.

LIQUID CHROMATOGRAPHY BLANK SPIKE RESULTS

		ATI I.D.:	411524
METHOD:	8310	**QC SAMPLE:**	Method Blank
CLIENT:	PTI Environmental	**DATE EXTRACTED:**	11/07/94
PROJECT #:	C4120308	**DATE ANALYZED:**	11/10/94
PROJECT NAME:	McCormick & Baxter	**DILUTION FACTOR:**	1
SAMPLE MATRIX:	WATER	**UNITS:**	ug/L

PARAMETER		SAMPLE RESULT	SPIKE CONC.	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
ACENAPHTHYLENE	<	1.0	10.0	6.8	68	7.5	75	10
PHENANTHRENE	<	0.05	1.0	0.84	84	0.84	84	0
PYRENE	<	0.1	1.0	0.9	90	0.8	80	12
BENZO(k)FLUORANTHENE	<	0.1	1.0	0.8	80	0.8	80	0
DIBENZO(a,h)ANTHRACENE	<	0.2	1.0	0.8	80	0.9	90	12
SURROGATE:								
BIPHENYL (21% - 149%)				78%		84%		

CONTROL LIMITS

	% REC	RPD
ACENAPHTHYLENE	48-112	50
PHENANTHRENE	63-134	36
PYRENE	80-140	40
BENZO(k)FLUORANTHENE	64-120	36
DIBENZO(a,h)ANTHRACENE	53-191	40

Analyst: 11/11/94

Reviewer: 11/11/94

Analytical **Technologies,** Inc.

METALS RESULTS

CLIENT I.D.:	Method Blank	**ATI I.D.:**	411524-0
CLIENT:	PTI Environmental	**DATE SAMPLED:**	NA
PROJECT #:	C4120308	**DATE RECEIVED:**	NA
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	11/07/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	11/07,08/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ARSENIC	< 0.005	7060
CHROMIUM	< 0.01	6010
COPPER	< 0.01	6010
ZINC	< 0.01	6010

Analyst: [illegible] 11/9/94

Reviewer: [illegible] 11/9/94

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	BT3-2	**ATI I.D.:**	411524-1
CLIENT:	PTI Environmental	**DATE SAMPLED:**	11/03/94
PROJECT #:	C4120308	**DATE RECEIVED:**	11/03/94
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	11/07/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	11/07,08/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ARSENIC	< 0.005	7060
CHROMIUM	< 0.01	6010
COPPER	< 0.01	6010
ZINC	0.34	6010

Analyst: [illegible] 11/9/94

Reviewer: [illegible] 11/9/94

Analytical Technologies, Inc.

METALS DUPLICATE RESULTS

METHOD:	6010 / 7000 series	**ATI I.D.:**	411524
CLIENT:	PTI Environmental	**QC SAMPLE:**	411524-1
PROJECT #:	C4120308	**DATE DIGESTED:**	11/07/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	11/07,08/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	DUPLICATE RESULT	RPD	RPD CONTROL LIMIT
ARSENIC	< 0.005	< 0.005	NA	20
CHROMIUM	< 0.01	< 0.01	NA	20
COPPER	< 0.01	< 0.01	NA	20
ZINC	0.34	0.33	3	20

Analyst: [signature] 11/9/94

Reviewer: [signature] 11/9/94

Analytical Technologies, Inc.

METALS SPIKE RESULTS

METHOD:	6010 / 7000 series	**ATI I.D.:**	411524
CLIENT:	PTI Environmental	**QC SAMPLE:**	411524-1
PROJECT #:	C4120308	**DATE DIGESTED:**	11/07/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	11/07,08/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	SPIKE CONC	SPIKE RESULT	% RECOV	CONTROL LIMIT
ARSENIC	< 0.005	0.040	0.037	93	75-125%
CHROMIUM	< 0.01	1.00	0.95	95	75-125%
COPPER	< 0.01	1.00	0.93	93	75-125%
ZINC	0.34	1.00	1.42	108	75-125%

Analyst: [signature] 11/9/94

Reviewer: [signature] 11/9/94

Analytical Technologies, Inc.

INORGANIC RESULTS

CLIENT I.D.:	Method Blank	**ATI I.D.:**	411524-0
CLIENT:	PTI Environmental	**DATE SAMPLED:**	N/A
PROJECT #:	C4120308	**DATE RECEIVED:**	N/A
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	11/03/94
SAMPLE MATRIX:	WATER	**UNITS:**	mg/L

PARAMETER	EPA METHOD	RESULTS
CHROMIUM, HEXAVALENT	7196	< 0.01

Analytical Technologies, Inc.

INORGANIC RESULTS

CLIENT I.D.:	BT3-2	**ATI I.D.:**	411524-1
CLIENT:	PTI Environmental	**DATE SAMPLED:**	11/03/94
PROJECT #:	C4120308	**DATE RECEIVED:**	11/03/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	11/03/94
SAMPLE MATRIX:	WATER	**UNITS:**	mg/L

PARAMETER	EPA METHOD	RESULTS
CHROMIUM, HEXAVALENT	7196	< 0.01

Analytical Technologies, Inc.

INORGANIC DUPLICATE RESULTS

CLIENT:	PTI Environmental	**ATI I.D.:**	411524
PROJECT #:	C4120308	**QC SAMPLE:**	411524-1
PROJECT NAME:	McCormick & Baxter	**DATE SAMPLED:**	11/03/94
SAMPLE MATRIX:	WATER	**DATE RECEIVED:**	11/03/94
		UNITS:	mg/L

PARAMETER	EPA METHOD	SAMPLE RESULT	DUP. SAMPLE RESULT	% RPD	CONTROL LIMITS % RPD
CHROMIUM, HEXAVALENT	7196	< 0.01	< 0.01	N/A	20

Analytical Technologies, Inc.

INORGANIC SPIKE RESULTS

CLIENT:	PTI Environmental	**ATI I.D.:**	411524
PROJECT #:	C4120308	**QC SAMPLE:**	411524-1
PROJECT NAME:	McCormick & Baxter	**DATE SAMPLED:**	11/03/94
SAMPLE MATRIX:	WATER	**DATE RECEIVED:**	11/03/94
		UNITS:	mg/L

PARAMETER	EPA METHOD	SAMPLE RESULT	SPIKE CONC.	SPIKE SAMPLE RESULT	% REC	CONTROL LIMITS % REC
CHROMIUM, HEXAVALENT	7196	< 0.01	0.20	0.21	105	75 - 125

PTI ENVIRONMENTAL SERVICES

CHAIN OF CUSTODY RECORD/ SAMPLE ANALYSIS REQUEST FORM

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Project: (Name and Number) McCormick & Baxter C4120308

Samplers: (Signature) John Swan

Sampling Contact: Steve Barnett

Phone: 503-636-4338

Ship Samples to: _____

Attn: _____

Sample No.	Tag No.	Date	Time	Sample Matrix: Water	Sediment	Tissue	Soil	Air	Other	Concentration (L M H)	Composite or Grab	Analyses Requested: 8310	8040 Phenols	Metals As, Cr, Cu, Zn	Hex Cr (24 hr).			Extra Container	Archive	Remarks
		'94																		
1	BT3-2	76601	11-3	1200	X							X								
2	BT3-2	76602	11-3	1200	X							X						X		41504
3	BT3-2	76603	11-3	1200	X								X							
4	BT3-2	76604	11-3	1200	X								X					X		
5	BT3-2	76605	11-3	1200	X									X						
6	BT3-2	76606	11-3	1200	X										X					

Method of Shipment: Hand

Condition of Samples Upon Receipt: _____

Custody Seal Intact: Yes ☐ No ☐ None ☒ Broken by: _____

Relinquished by: John Swan (Signature) Received by: M Nieman (Signature) Date/Time 11/3/94 2:00p.

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time _____

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time _____

Received for Lab by: _____ (Signature) Date/Time _____

Distribution: Original and One Copy - Accompany Shipment; One Copy - Project File

RUSH

FF Rev 1/91

Analytical**Technologies,**Inc. 17400 S.W. Upper Boones Ferry Road, Suite 270 Durham, OR. 97224
(503) 684-0447 (503) 620-0393 (FAX)

RECEIVED
DEC - 1 1994
PTI

ATI I.D. 411577

November 22, 1994

Dan Peek
PTI Environmental Services
400 Kruse Way, Pl. #2-285
Lake Oswego, OR 97035

Project Name / Number: McCormick & Baxter / C4120308

Attention: Dan Peek

On November 11, 1994, Analytical Technologies, Inc. received six water samples for analysis for the above listed project. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (503)684-0447.

for
Vivian Fuchise
Project Manager

Steven E. Stanley for
Alan J. Kleinschmidt
Laboratory Manager

AJK:alm
Enclosure

Analytical **Technologies,** Inc.

SAMPLE CROSS REFERENCE SHEET

CLIENT:	PTI Environmental	**ATI I.D.:**	411577
PROJECT #:	C4120308		
PROJECT NAME:	McCormick & Baxter	**MATRIX:**	WATER

ATI #	CLIENT DESCRIPTION	DATE SAMPLED
411577-1	T1 EFF	11/11/94
411577-2	T2 EFF	11/11/94
411577-3	GAC EFF	11/11/94
411577-4	BT3A-2A	11/11/94
411577-5	BT5 EFF	11/11/94
411577-6	DIS FILT	11/11/94

----------TOTALS----------

MATRIX	# SAMPLES
WATER	6

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ANALYTICAL SCHEDULE

CLIENT: PTI Environmental **ATI I.D.:** 411577
PROJECT #: C4120308
PROJECT NAME: McCormick & Baxter

ANALYSIS	TECHNIQUE	REFERENCE	LAB
Zinc	ICAP	EPA 6010	PLD

PLD = ATI - Portland
R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical Technologies, Inc.

METALS RESULTS

METHOD:	6010 - Zinc	**ATI I.D.:**	411577
CLIENT:	PTI Environmental	**DATE SAMPLED:**	11/11/94
PROJECT #:	C4120308	**DATE RECEIVED:**	11/11/94
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	11/15/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	11/15/94
		UNITS:	mg/L

ATI I.D.	CLIENT I.D.	RESULT
411577-0	Method Blank	< 0.01
411577-1	T1 EFF	23.3
411577-2	T2 EFF	24.8
411577-3	GAC EFF	0.88
411577-4	BT3A-2A	0.15
411577-5	BT5 EFF	< 0.01
411577-6	DIS FILT	0.13

Analyst: D.T. 11/15/94

Reviewer: LLh 11/18/94

Analytical Technologies, Inc.

METALS DUPLICATE RESULTS

METHOD:	6010	**ATI I.D.:**	411577
CLIENT:	PTI Environmental	**QC SAMPLE:**	411577-3
PROJECT #:	C4120308	**DATE DIGESTED:**	11/15/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	11/15/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	DUPLICATE RESULT	RPD	RPD CONTROL LIMIT
ZINC	0.88	0.85	3	20

Analyst: [illegible] 11/17/94

Reviewer: [illegible] 11/18/94

Analytical Technologies, Inc.

METALS SPIKE RESULTS

METHOD:	6010	**ATI I.D.:**	411577
CLIENT:	PTI Environmental	**QC SAMPLE:**	411577-3
PROJECT #:	C4120308	**DATE DIGESTED:**	11/15/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	11/15/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	SPIKE CONC	SPIKE RESULT	% RECOV	CONTROL LIMIT
ZINC	0.88	1.00	1.81	93	75-125%

Analyst: [signature] 11/17/94

Reviewer: [signature] 11/18/94

ATI I.D.
411577

PTI ENVIRONMENTAL SERVICES

CHAIN OF CUSTODY RECORD/ SAMPLE ANALYSIS REQUEST FORM

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Project: (Name and Number) McCormick + Baxter; C412030C

Samplers: (Signature)

Sampling Contact: DAN PEEK
Phone: 636 4336
Ship Samples to: ATI
VIVIAN
Attn:

Sample No.	Tag No.	Date	Time	Sample Matrix: Water	Sediment	Tissue	Soil	Air	Other	Concentration (L M H)	Composite or Grab	Analyses Requested: ZINC						Extra Container	Archive	Remarks
T1 EFF	-1	11/11	0845	X								X								TOTAL ZN
T2 EFF	-2	11/11		X								X								
GAC EFF	-3	11/11		X								X								
BT3A-2A	-4	11/11		X								X								
BT3 EFF	-5	11/11		X								X								
DISFILT	-6	11/11		X								X								PLEASE FILTER
												PLEASE				RUSH				24 hr

Method of Shipment: DELIVERED

Condition of Samples Upon Receipt:

Custody Seal Intact: Yes ☐ No ☐ None ☐ Broken by:

Relinquished by: (Signature) — Received by: (Signature) — Date/Time 11/11/94 0940

Relinquished by: (Signature) — Received by: (Signature) — Date/Time

Relinquished by: (Signature) — Received by Mobile Lab for Field Analysis: (Signature) — Date/Time

Received for Lab by: (Signature) — Date/Time

Distribution: Original and One Copy - Accompany Shipment; One Copy - Project File

FF Rev 1/91

C4120308

Analytical **Technologies,** Inc.

17400 S.W. Upper Boones Ferry Road, Suite 270 Durham, OR. 97224
(503) 684-0447 (503) 620-0393 (FAX)

ATI I.D. 411652

November 30, 1994

Dan Peek
PTI Environmental Services
400 Kruse Way, Pl. #2-285
Lake Oswego, OR 97035

Project Name / Number: McCormick & Baxter / C4120308

Attention: Dan Peek

On November 21, 1994, Analytical Technologies, Inc. received seven water samples for analysis for the above listed project. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (503)684-0447.

Vivian Fuchise
Project Manager

Alan J. Kleinschmidt
Laboratory Manager

AJK:alm
Enclosure

Analytical **Technologies,** Inc.

SAMPLE CROSS REFERENCE SHEET

CLIENT:	PTI Environmental	**ATI I.D.:**	411652
PROJECT #:	C4120308		
PROJECT NAME:	McCormick & Baxter	**MATRIX:**	WATER

ATI #	CLIENT DESCRIPTION	DATE SAMPLED
411652-1	TK1 EFF	11/21/94
411652-2	TK2 EFF	11/21/94
411652-3	WELL 4	11/21/94
411652-4	WELL 7	11/21/94
411652-5	WELL 1	11/21/94
411652-6	W741C	11/21/94
411652-7	TK1 INF	11/21/94

----------TOTALS----------

MATRIX	# SAMPLES
WATER	7

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ANALYTICAL SCHEDULE

CLIENT: PTI Environmental **ATI I.D.:** 411652
PROJECT #: C4120308
PROJECT NAME: McCormick & Baxter

ANALYSIS	TECHNIQUE	REFERENCE	LAB
Iron	ICAP	EPA 6010	PLD
Arsenic	AA/GF	EPA 7060	PLD
Chromium	ICAP	EPA 6010	PLD
Copper	ICAP	EPA 6010	PLD
Zinc	ICAP	EPA 6010	PLD

PLD = ATI - Portland
R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical **Technologies,** Inc.

METALS RESULTS

CLIENT I.D.:	Method Blank	**ATI I.D.:**	411652-0
CLIENT:	PTI Environmental	**DATE SAMPLED:**	NA
PROJECT #:	C4120308	**DATE RECEIVED:**	NA
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	11/21/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	11/21,22/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ARSENIC	< 0.005	7060
CADMIUM	< 0.005	6010
CHROMIUM	< 0.01	6010
COPPER	< 0.01	6010
IRON	< 0.02	6010
ZINC	< 0.01	6010

Analyst: JLL 11/23/94

Reviewer: SGS 11/23/94

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	TK1 EFF	**ATI I.D.:**	411652-1
CLIENT:	PTI Environmental	**DATE SAMPLED:**	11/21/94
PROJECT #:	C4120308	**DATE RECEIVED:**	11/21/94
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	11/21/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	11/21,22/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ARSENIC	0.015	7060
CADMIUM	< 0.005	6010
CHROMIUM	< 0.01	6010
COPPER	< 0.01	6010
IRON	58.9	6010
ZINC	86.2	6010

Analyst: [signature] 11/23/94

Reviewer: [signature] 11/23/94

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	TK2 EFF	**ATI I.D.:**	411652-2
CLIENT:	PTI Environmental	**DATE SAMPLED:**	11/21/94
PROJECT #:	C4120308	**DATE RECEIVED:**	11/21/94
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	11/21/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	11/21,22/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ARSENIC	0.005	7060
CADMIUM	< 0.005	6010
CHROMIUM	< 0.01	6010
COPPER	< 0.01	6010
IRON	17.1	6010
ZINC	21.5	6010

Analyst: [signature] 11/23/94

Reviewer: [signature] 11/23/94

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	WELL 4	**ATI I.D.:**	411652-3
CLIENT:	PTI Environmental	**DATE SAMPLED:**	11/21/94
PROJECT #:	C4120308	**DATE RECEIVED:**	11/21/94
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	11/21/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	11/21,22/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ZINC	0.08	6010

Analyst: [signature] 11/23/94

Reviewer: [signature] 11/23/94

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	WELL 7	**ATI I.D.:**	411652-4
CLIENT:	PTI Environmental	**DATE SAMPLED:**	11/21/94
PROJECT #:	C4120308	**DATE RECEIVED:**	11/21/94
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	11/21/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	11/21,22/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ZINC	0.08	6010

Analyst: [signature] 11/23/94

Reviewer: SBS 11/23/94

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	WELL 1	**ATI I.D.:**	411652-5
CLIENT:	PTI Environmental	**DATE SAMPLED:**	11/21/94
PROJECT #:	C4120308	**DATE RECEIVED:**	11/21/94
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	11/21/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	11/21,22/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ZINC	0.03	6010

Analyst: [signature] 11/23/94

Reviewer: [signature] 11/23/94

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	W741C	**ATI I.D.:**	411652-6
CLIENT:	PTI Environmental	**DATE SAMPLED:**	11/21/94
PROJECT #:	C4120308	**DATE RECEIVED:**	11/21/94
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	11/21/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	11/21,22/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ARSENIC	0.054	7060
CADMIUM	< 0.005	6010
CHROMIUM	< 0.01	6010
COPPER	< 0.01	6010
IRON	48.2	6010
ZINC	0.04	6010

Analyst: JLC 11/23/94

Reviewer: SBS 11/23/94

Analytical **Technologies,** Inc.

METALS DUPLICATE RESULTS

METHOD:	6010 / 7000 series	**ATI I.D.:**	411652
CLIENT:	PTI Environmental	**QC SAMPLE:**	411647-1
PROJECT #:	C4120308	**DATE DIGESTED:**	11/21/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	11/21,22/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	DUPLICATE RESULT	RPD	RPD CONTROL LIMIT
ARSENIC	0.012	0.012	0	20
CADMIUM	< 0.005	< 0.005	NA	20
CHROMIUM	< 0.01	< 0.01	NA	20
COPPER	< 0.01	< 0.01	NA	20
IRON	43.0	43.0	0	20
ZINC	0.13	0.14	7	20

Analyst: [illegible] 11/23/94

Reviewer: [illegible] 11/23/94

Analytical Technologies, Inc.

METALS SPIKE RESULTS

METHOD:	6010 / 7000 series	**ATI I.D.:**	411652
CLIENT:	PTI Environmental	**QC SAMPLE:**	411647-1
PROJECT #:	C4120308	**DATE DIGESTED:**	11/21/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	11/21,22/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	SPIKE CONC	SPIKE RESULT	% RECOV		CONTROL LIMIT
ARSENIC	0.012	0.040	0.054	105		75-125%
CADMIUM	< 0.005	1.00	0.924	92		75-125%
CHROMIUM	< 0.01	1.00	0.96	96		75-125%
COPPER	< 0.01	1.00	0.95	95		75-125%
IRON	43.0	2.00	45.3	115	*	75-125%
ZINC	0.13	1.00	0.94	81		75-125%

* Spike control limit not applicable. The sample level is greater than four times the spike level.

Analyst: [signature] 11/23/94

Reviewer: [signature] 11/23/94

PTI ENVIRONMENTAL SERVICES

CHAIN OF CUSTODY RECORD/ SAMPLE ANALYSIS REQUEST FORM

1228

Page __ of __

Project: (Name and Number) McCormick & Baxter C4120308

Samplers: (Signature) John Shaw

Sampling Contact: Steve Barnet

Phone: 503-636-4338

Ship Samples to: _____

Attn: _____

Remarks

	Sample No.	Tag No.	Date	Time	Sample Matrix: Water	Sediment	Tissue	Soil	Air	Other	Concentration (L M H)	Composite or Grab	Analyses Requested: Metals Fe, Zn, As, Cr, Cu	Zinc					Extra Container	Archive
	4116-52		94																	
-1	TK1EFF	76607	11-21	945	X								X							
-2	TK2EFF	76608	11-21	945	X								X							
-3	WELL4	76609	11-21	1005	X									X						
-4	WELL7	76610	11-21	1005	X									X						
-5	WELL1	76611	11-21	1030	X									X						
-6	W741C	76612	11-21	1030	X								X							
-7	TK1INF	76613	11-21	1040	X								X							

24 hr TAT

Method of Shipment: _____

Condition of Samples Upon Receipt: _____

Custody Seal Intact: Yes ☐ No ☐ None ☐ Broken by: _____

Relinquished by: John Shaw (Signature) Received by: _____ (Signature) Date/Time 11/21/94 1235

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time _____

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time _____

Received for Lab by: _____ (Signature) Date/Time _____

Distribution: Original and One Copy - Accompany Shipment; One Copy - Project File

FF Rev 1/91

Analytical**Technologies,**Inc. 17400 S.W. Upper Boones Ferry Road, Suite 270 Durham, OR. 97224
(503) 684-0447 (503) 620-0393 (FAX)

ATI I.D. 411690

December 5, 1994

Steve Barnett
PTI Environmental Services
400 Kruse Way, Pl. #2-285
Lake Oswego, OR 97035

Project Name / Number: McCormick & Baxter / C4120308

Attention: Steve Barnett

On November 28, 1994, Analytical Technologies, Inc. received two water samples for analysis for the above listed project. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (503)684-0447.

Vivian Fuchise
Project Manager

Alan J. Kleinschmidt
Laboratory Manager

AJK:alm
Enclosure

Analytical Technologies, Inc.

SAMPLE CROSS REFERENCE SHEET

CLIENT:	PTI Environmental	**ATI I.D.:**	411690
PROJECT #:	C4120308		
PROJECT NAME:	McCormick & Baxter	**MATRIX:**	WATER

ATI #	CLIENT DESCRIPTION	DATE SAMPLED
411690-1	SED3	11/23/94
411690-2	TK3a	11/23/94

----------TOTALS----------

MATRIX	# SAMPLES
WATER	2

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ANALYTICAL SCHEDULE

CLIENT: PTI Environmental **ATI I.D.:** 411690
PROJECT #: C4120308
PROJECT NAME: McCormick & Baxter

ANALYSIS	TECHNIQUE	REFERENCE	LAB
Antimony	ICAP	EPA 6010	PLD
Arsenic	AA/GF	EPA 7060	PLD
Beryllium	ICAP	EPA 6010	PLD
Cadmium	ICAP	EPA 6010	PLD
Chromium	ICAP	EPA 6010	PLD
Copper	ICAP	EPA 6010	PLD
Iron	ICAP	EPA 6010	PLD
Lead	AA/GF	EPA 7421	PLD
Manganese	ICAP	EPA 6010	PLD
Mercury	AA / Cold Vapor	EPA 7470	PLD
Nickel	ICAP	EPA 6010	PLD
Selenium	AA/GF	EPA 7740	PLD
Silver	ICAP	EPA 6010	PLD
Thallium	AA/GF	EPA 7841	PLD
Zinc	ICAP	EPA 6010	PLD
Sodium	ICAP	EPA 6010	PLD
Chloride	Titrimetric	EPA 325.3	PLD

PLD = ATI - Portland
R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	Method Blank	**ATI I.D.:**	411690-0
CLIENT:	PTI Environmental	**DATE SAMPLED:**	NA
PROJECT #:	C4120308	**DATE RECEIVED:**	NA
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	11/28/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	11/29,30/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ANTIMONY	< 0.05	6010
ARSENIC	< 0.005	7060
BERYLLIUM	< 0.005	6010
CADMIUM	< 0.005	6010
CHROMIUM	< 0.01	6010
COPPER	< 0.01	6010
IRON	< 0.02	6010
LEAD	< 0.002	7421
MANGANESE	< 0.01	6010
MERCURY	< 0.0005	7470
NICKEL	< 0.02	6010
SELENIUM	< 0.005	7740
SILVER	< 0.01	6010
SODIUM	< 0.1	6010
THALLIUM	< 0.005	7841
ZINC	< 0.01	6010

Analyst: CMH. 11/30/94

Reviewer: D.T. 12/5/94

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SED3	**ATI I.D.:**	411690-1
CLIENT:	PTI Environmental	**DATE SAMPLED:**	11/23/94
PROJECT #:	C4120308	**DATE RECEIVED:**	11/28/94
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	11/28/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	11/29,30/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ANTIMONY	< 0.05	6010
ARSENIC	0.079	7060
BERYLLIUM	< 0.005	6010
CADMIUM	< 0.005	6010
CHROMIUM	0.04	6010
COPPER	0.07	6010
IRON	124	6010
LEAD	0.019	7421
MANGANESE	3.98	6010
MERCURY	< 0.0005	7470
NICKEL	< 0.02	6010
SELENIUM	< 0.005	7740
SILVER	< 0.01	6010
SODIUM	18.8	6010
THALLIUM	< 0.005	7841
ZINC	0.26	6010

Analyst: [signature] 11/30/94

Reviewer: [signature] 12/5/94

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	TK3a	**ATI I.D.:**	411690-2
CLIENT:	PTI Environmental	**DATE SAMPLED:**	11/23/94
PROJECT #:	C4120308	**DATE RECEIVED:**	11/28/94
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	11/28/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	11/29,30/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ANTIMONY	< 0.05	6010
ARSENIC	< 0.005	7060
BERYLLIUM	< 0.005	6010
CADMIUM	< 0.005	6010
CHROMIUM	< 0.01	6010
COPPER	< 0.01	6010
IRON	1.18	6010
LEAD	< 0.002	7421
MANGANESE	4.30	6010
MERCURY	< 0.0005	7470
NICKEL	0.05	6010
SELENIUM	< 0.005	7740
SILVER	< 0.01	6010
SODIUM	297	6010
THALLIUM	< 0.005	7841
ZINC	0.15	6010

Analyst: _____ 11/30/94

Reviewer: _____ 12/15/94

Analytical Technologies, Inc.

METALS DUPLICATE RESULTS

METHOD:	6010 / 7000 series	**ATI I.D.:**	411690
CLIENT:	PTI Environmental	**QC SAMPLE:**	411690-1
PROJECT #:	C4120308	**DATE DIGESTED:**	11/28/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	11/29,30/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	DUPLICATE RESULT	RPD		RPD CONTROL LIMIT
ANTIMONY	< 0.05	< 0.05	NA		20
ARSENIC	0.079	0.077	3		20
BERYLLIUM	< 0.005	< 0.005	NA		20
CADMIUM	< 0.005	< 0.005	NA		20
CHROMIUM	0.04	0.04	0		20
COPPER	0.07	0.07	0		20
IRON	124	126	2		20
LEAD	0.019	0.021	10		20
MANGANESE	3.98	4.04	1		20
MERCURY	< 0.0005	< 0.0005	NA	*	20
NICKEL	< 0.02	< 0.02	NA		20
SELENIUM	< 0.005	< 0.005	NA		20
SILVER	< 0.01	< 0.01	NA		20
SODIUM	18.8	19.1	2		20
THALLIUM	< 0.005	< 0.005	NA		20
ZINC	0.26	0.25	4		20

* Quality control for mercury performed on sample 411690-2.

Analyst: 12/5/94

Reviewer: 12/5/94

Analytical Technologies, Inc.

METALS SPIKE RESULTS

METHOD:	6010 / 7000 series	**ATI I.D.:**	411690
CLIENT:	PTI Environmental	**QC SAMPLE:**	411690-1
PROJECT #:	C4120308	**DATE DIGESTED:**	11/28/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	11/29,30/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	SPIKE CONC	SPIKE RESULT	% RECOV		CONTROL LIMIT
ANTIMONY	< 0.05	1.00	0.96	96		75-125%
ARSENIC	0.079	0.040	0.120	103		75-125%
BERYLLIUM	< 0.005	1.00	0.970	97		75-125%
CADMIUM	< 0.005	1.00	0.978	98		75-125%
CHROMIUM	0.04	1.00	1.04	100		75-125%
COPPER	0.07	1.00	1.03	96		75-125%
IRON	124	2.00	127	150	**	75-125%
LEAD	0.019	0.020	0.036	85		75-125%
MANGANESE	3.98	1.00	4.99	101		75-125%
MERCURY	< 0.0005	0.0020	0.0020	100	*	75-125%
NICKEL	< 0.02	1.00	1.09	109		75-125%
SELENIUM	< 0.005	0.020	0.016	80		75-125%
SILVER	< 0.01	1.00	0.99	99		75-125%
THALLIUM	< 0.005	0.040	0.038	95		75-125%
ZINC	0.26	1.00	1.10	84		75-125%

** Spike control limit not applicable. The sample level is greater than four times the spike level.

* Quality control for mercury performed on sample 411690-2.

Analyst: D.T. 12/5/94

Reviewer: [illegible] 12/5/94

Analytical Technologies, Inc.

METALS BLANK SPIKE RESULTS

METHOD:	6010 / 7000 series	**ATI I.D.:**	411690
CLIENT:	PTI Environmental	**QC SAMPLE:**	Method Blank
PROJECT #:	C4120308	**DATE DIGESTED:**	11/28/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	11/29,30/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SPIKE RESULT	SPIKE CONC	% RECOV	CONTROL LIMIT
ANTIMONY	0.93	1.00	93	80-120%
ARSENIC	0.042	0.040	105	80-120%
BERYLLIUM	0.889	1.00	89	80-120%
CADMIUM	0.940	1.00	94	80-120%
CHROMIUM	0.93	1.00	93	80-120%
COPPER	0.86	1.00	86	80-120%
IRON	1.77	2.00	89	80-120%
LEAD	0.020	0.020	100	80-120%
MANGANESE	0.90	1.00	90	80-120%
MERCURY	0.0020	0.0020	100	80-120%
NICKEL	1.02	1.00	102	80-120%
SELENIUM	0.019	0.020	95	80-120%
SILVER	0.92	1.00	92	80-120%
THALLIUM	0.042	0.040	105	80-120%
ZINC	0.91	1.00	91	80-120%

Analyst: D.T. 12/5/94

Reviewer: [illegible] 12/5/94

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

METHOD:	EPA 325.3 (Chloride)	**ATI I.D.:**	411690
CLIENT:	PTI Environmental	**DATE SAMPLED:**	11/23/94
PROJECT #:	C4120308	**DATE RECEIVED:**	11/28/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	11/28/94
SAMPLE MATRIX:	WATER	**UNITS:**	mg/L

ATI I.D.	CLIENT I.D.	RESULTS
411690-0	Method Blank	< 0.5
411690-1	SED 3	105
411690-2	TK 3A	89

Analytical**Technologies,**Inc.

INORGANIC DUPLICATE RESULTS

CLIENT:	PTI Environmental	**ATI I.D.:**	411690
PROJECT #:	C4120308	**QC SAMPLE:**	411619-1
PROJECT NAME:	McCormick & Baxter	**DATE SAMPLED:**	N/A
SAMPLE MATRIX:	WATER	**DATE RECEIVED:**	N/A
		UNITS:	mg/L

PARAMETER	EPA METHOD	SAMPLE RESULT	DUP. SAMPLE RESULT	% RPD	CONTROL LIMITS % RPD
CHLORIDE	325.3	3.2	3.5	9	20

Analytical Technologies, Inc.

INORGANIC SPIKE RESULTS

CLIENT:	PTI Environmental	**ATI I.D.:**	411690
PROJECT #:	C4120308	**QC SAMPLE:**	411619-1
PROJECT NAME:	McCormick & Baxter	**DATE SAMPLED:**	N/A
SAMPLE MATRIX:	WATER	**DATE RECEIVED:**	N/A
		UNITS:	mg/L

PARAMETER	EPA METHOD	SAMPLE RESULT	SPIKE CONC.	SPIKE SAMPLE RESULT	% REC	CONTROL LIMITS % REC
CHLORIDE	325.3	3.2	20.0	23.2	100	75 - 125

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Page __ of __

PTI ENVIRONMENTAL SERVICES

CHAIN OF CUSTODY RECORD/ SAMPLE ANALYSIS REQUEST FORM

Project: (Name and Number) McCormick & Baxter C4120308

Samplers: (Signature) [signature]

Sampling Contact: Steve Barnet

Phone: 503-636-4338

Ship Samples to: ______

Attn: ______

411690 '94

Sample No.	Tag No.	Date	Time	Water	Sediment	Tissue	Soil	Air	Other	Concentration (L M H)	Composite or Grab	~~Metals~~	Priority pollutant metals	+ Fe, Mn, Na, Cl				Extra Container	Archive	Remarks
SED3	76651	11-23	1110	X								~~X~~	X	X						-1 48hr
TK3a	76652	11-23	1400	X									X	X						-2

Method of Shipment: HAND

Condition of Samples Upon Receipt: GOOD

Custody Seal Intact: Yes ☐ No ☐ None ☒ Broken by: ______

Relinquished by: [signature] (Signature) Received by: [signature] (Signature) Date/Time 11/28/94 9:00

Relinquished by: ______ (Signature) Received by: ______ (Signature) Date/Time ______

Relinquished by: ______ (Signature) Received by Mobile Lab for Field Analysis: ______ (Signature) Date/Time ______

Received for Lab by: ______ (Signature) Date/Time ______

Distribution: Original and One Copy - Accompany Shipment; One Copy - Project File

FF Rev 1/91

Analytical**Technologies,**Inc.

17400 S.W. Upper Boones Ferry Road, Suite 270 Durham, OR. 97224
(503) 684-0447 (503) 620-0393 (FAX)

ATI I.D. 412539

December 8, 1994

Steve Barnett
PTI Environmental Services
400 Kruse Way, Pl. #2-285
Lake Oswego, OR 97035

Project Name / Number: McCormick & Baxter / C4120308

Attention: Steve Barnett

On Dec 6, 1994, Analytical Technologies, Inc. received one water sample for analysis for the above listed project. The sample was analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (503)684-0447.

Vivian Fuchise
Project Manager

Alan J. Kleinschmidt
Laboratory Manager

AJK:alm
Enclosure

Analytical **Technologies,** Inc.

SAMPLE CROSS REFERENCE SHEET

CLIENT:	PTI Environmental	**ATI I.D.:**	412539
PROJECT #:	C4120308		
PROJECT NAME:	McCormick & Baxter	**MATRIX:**	WATER

ATI #	CLIENT DESCRIPTION	DATE SAMPLED
412539-1	GAC EFF	12/05/94

----------TOTALS----------

MATRIX	# SAMPLES
WATER	1

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ANALYTICAL SCHEDULE

CLIENT:	PTI Environmental	**ATI I.D.:**	412539
PROJECT #:	C4120308		
PROJECT NAME:	McCormick & Baxter		

ANALYSIS	TECHNIQUE	REFERENCE	LAB
Zinc	ICAP	EPA 6010	PLD

PLD = ATI - Portland
R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	Method Blank	**ATI I.D.:**	412539-0
CLIENT:	PTI Environmental Services	**DATE SAMPLED:**	NA
PROJECT #:	C4120308	**DATE RECEIVED:**	NA
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	12/06/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	12/06/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ZINC	< 0.01	6010

Analyst: [illegible] 12/7/94

Reviewer: [illegible] 12/7/94

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	GAC EFF	**ATI I.D.:**	412539-1
CLIENT:	PTI Environmental Services	**DATE SAMPLED:**	12/06/94
PROJECT #:	C4120308	**DATE RECEIVED:**	12/06/94
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	12/06/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	12/06/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ZINC	0.17	6010

Analyst: [illegible] 12/7/94

Reviewer: [illegible] 12/7/94

Analytical Technologies, Inc.

METALS DUPLICATE RESULTS

METHOD:	6010	**ATI I.D.:**	412539
CLIENT:	PTI Environmental Services	**QC SAMPLE:**	412539-1
PROJECT #:	C4120308	**DATE DIGESTED:**	12/06/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	12/06/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	DUPLICATE RESULT	RPD	RPD CONTROL LIMIT
ZINC	0.17	0.17	0	20

Analyst: D.T. 12/7/94

Reviewer: [illegible] 12/7/94

Analytical**Technologies,**Inc.

METALS SPIKE RESULTS

METHOD:	6010	**ATI I.D.:**	412539
CLIENT:	PTI Environmental Services	**QC SAMPLE:**	412539-1
PROJECT #:	C4120308	**DATE DIGESTED:**	12/06/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	12/06/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	SPIKE CONC	SPIKE RESULT	% RECOV	CONTROL LIMIT
ZINC	0.17	1.00	1.03	86	75-125%

Analyst: D.T. 12/7/94

Reviewer: JLH. 12/7/94

PTI ENVIRONMENTAL SERVICES

CHAIN OF CUSTODY RECORD/ SAMPLE ANALYSIS REQUEST FORM

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Page __ of __

Project: (Name and Number) McCormick & Baxter C4120308

Samplers: (Signature) John Swan

Sampling Contact: Steve Barnett

Phone: 503-636-4338

Ship Samples to: _____

Attn: _____

Sample No.	Tag No.	Date	Time	Sample Matrix								Analyses Requested								Remarks
				Water	Sediment	Tissue	Soil	Air	Other	Concentration (L M H)	Composite or Grab	Zinc						Extra Container	Archive	
412539		'94																		
GNC EFF	76653	12-5	1600	X								X							+1	RUSH 24hr

Method of Shipment: _____

Condition of Samples Upon Receipt: _____

Custody Seal Intact: Yes ☐ No ☐ None ☐ Broken by: _____

Relinquished by: John Swan (Signature) Received by: _____ (Signature) Date/Time 12/6/94 820

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time _____

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time _____

Received for Lab by: _____ (Signature) Date/Time _____

Distribution: Original and One Copy - Accompany Shipment; One Copy - Project File

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Analytical **Technologies,** Inc.

17400 S.W. Upper Boones Ferry Road, Suite 270 Durham, OR. 97224
(503) 684-0447 (503) 620-0393 (FAX)

RECEIVED
JAN 03 1995

ATI I.D. 412576

December 29, 1994

Steve Barnett
PTI Environmental Services
400 Kruse Way, Pl. #2-285
Lake Oswego, OR 97035

Project Name / Number: McCormick & Baxter / C4120308

Attention: Steve Barnett

On December 12, 1994, Analytical Technologies, Inc. received one water sample for analysis for the above listed project. The sample was analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (503)684-0447.

Vivian Fuchise
Project Manager

for
Alan J. Kleinschmidt
Laboratory Manager

AJK:alm
Enclosure

Analytical Technologies, Inc.

SAMPLE CROSS REFERENCE SHEET

CLIENT:	PTI Environmental	**ATI I.D.:**	412576
PROJECT #:	C4120308		
PROJECT NAME:	McCormick & Baxter	**MATRIX:**	WATER

ATI #	CLIENT DESCRIPTION	DATE SAMPLED
412576-1	BT3A	12/12/94

----------TOTALS----------

MATRIX	# SAMPLES
WATER	1

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ANALYTICAL SCHEDULE

CLIENT: PTI Environmental **ATI I.D.:** 412576
PROJECT #: C4120308
PROJECT NAME: McCormick & Baxter

ANALYSIS	TECHNIQUE	REFERENCE	LAB
Zinc	ICAP	EPA 6010	PLD

PLD = ATI - Portland
R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	Method Blank	**ATI I.D.:**	412576-0
CLIENT:	PTI Environmental	**DATE SAMPLED:**	NA
PROJECT #:	C4120308	**DATE RECEIVED:**	NA
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	12/13/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	12/19/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ZINC	< 0.01	6010

Analyst: D 12/20/94

Reviewer: [illegible] 12/20/94

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	BT3A	**ATI I.D.:**	412576-1
CLIENT:	PTI Environmental	**DATE SAMPLED:**	12/12/94
PROJECT #:	C4120308	**DATE RECEIVED:**	12/12/94
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	12/13/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	12/19/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ZINC	0.13	6010

Analyst: DT 12/20/94

Reviewer: HH. 12/28/94

Analytical Technologies, Inc.

METALS DUPLICATE RESULTS

METHOD:	6010	**ATI I.D.:**	412576
CLIENT:	PTI Environmental	**QC SAMPLE:**	412576-1
PROJECT #:	C4120308	**DATE DIGESTED:**	12/13/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	12/19/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	DUPLICATE RESULT	RPD	RPD CONTROL LIMIT
ZINC	0.13	0.13	0	20

Analyst: D.T. 12/20/94

Reviewer: [illegible] 12/28/94

Analytical Technologies, Inc.

METALS SPIKE RESULTS

METHOD:	6010	**ATI I.D.:**	412576
CLIENT:	PTI Environmental	**QC SAMPLE:**	412576-1
PROJECT #:	C4120308	**DATE DIGESTED:**	12/13/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	12/19/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	SPIKE CONC	SPIKE RESULT	% RECOV	CONTROL LIMIT
ZINC	0.13	1.00	1.04	91	75-125%

Analyst: D.T 12/20/94

Reviewer: JLL - 12/29/94

PTI ENVIRONMENTAL SERVICES

CHAIN OF CUSTODY RECORD/ SAMPLE ANALYSIS REQUEST FORM

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Project: (Name and Number) McCormick & Baxter C4120308

Samplers: (Signature)

Sampling Contact: Steve Barnett

Phone: (503) 636-4338

Ship Samples to:

Attn:

Sample No.	Tag No.	Date	Time	Sample Matrix: Water	Sediment	Tissue	Soil	Air	Other	Concentration (L M H)	Composite or Grab	Analyses Requested: Zinc						Extra Container	Archive
		94																	
-1 BT3A	76654	12-12	1015	X								X							

Remarks

ATI I.D. 412576

RUSH

24 hr.

Method of Shipment:

Condition of Samples Upon Receipt:

Custody Seal Intact: Yes ☐ No ☐ None ☐ Broken by:

Relinquished by: (Signature) Date/Time

Relinquished by: (Signature) Date/Time

Relinquished by: (Signature)

Received by: (Signature) Date/Time

Received by: (Signature) Date/Time 12/12/94 11:20A

Received by Mobile Lab for Field Analysis: (Signature) Date/Time

Received for Lab by: (Signature) Date/Time

FF Rev 1/91

Distribution: Original and One Copy - Accompany Shipment; One Copy - Project File

Analytical **Technologies,** Inc.

17400 S.W. Upper Boones Ferry Road, Suite 270 Durham, OR. 97224
(503) 684-0447 (503) 620-0393 (FAX)

ATI I.D. 412713

December 30, 1994

Steve Barnett
PTI Environmental Services
400 Kruse Way, Pl. #2-285
Lake Oswego, OR 97035

Project Name / Number: McCormick & Baxter / C4120308

Attention: Steve Barnett

On December 29, 1994, Analytical Technologies, Inc. received one water sample for analysis for the above listed project. The sample was analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (503)684-0447.

Vivian Fuchise
Project Manager

Steven E Stanley for
Alan J. Kleinschmidt
Laboratory Manager

AJK:alm
Enclosure

Analytical**Technologies,**Inc.

SAMPLE CROSS REFERENCE SHEET

CLIENT:	PTI Environmental	**ATI I.D.:**	412713
PROJECT #:	C4120308		
PROJECT NAME:	McCormick & Baxter	**MATRIX:**	WATER

ATI #	CLIENT DESCRIPTION	DATE SAMPLED
412713-1	BT3A	12/28/94

----------TOTALS----------

MATRIX	# SAMPLES
WATER	1

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ANALYTICAL SCHEDULE

CLIENT: PTI Environmental **ATI I.D.:** 412713
PROJECT #: C4120308
PROJECT NAME: McCormick & Baxter

ANALYSIS	TECHNIQUE	REFERENCE	LAB
Zinc	ICAP	EPA 6010	PLD

PLD = ATI - Portland
R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical**Technologies,**Inc.

METALS RESULTS

CLIENT I.D.:	Method Blank	**ATI I.D.:**	412713-0
CLIENT:	PTI Environmental	**DATE SAMPLED:**	NA
PROJECT #:	C4120308	**DATE RECEIVED:**	NA
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	12/29/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	12/29/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ZINC	< 0.01	6010

Analyst: L.T. 12/29/94

Reviewer: LLH - 12/29/94

Analytical **Technologies,** Inc.

METALS RESULTS

CLIENT I.D.:	BT3A	**ATI I.D.:**	412713-1
CLIENT:	PTI Environmental	**DATE SAMPLED:**	12/28/94
PROJECT #:	C4120308	**DATE RECEIVED:**	12/29/94
PROJECT NAME:	McCormick & Baxter	**DATE DIGESTED:**	12/29/94
SAMPLE MATRIX:	WATER	**DATE ANALYZED:**	12/29/94
		DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	RESULTS	METHOD
ZINC	0.22	6010

Analyst: D. T 12/29/94

Reviewer: [illegible] 12/29/94

Analytical**Technologies,**Inc.

METALS DUPLICATE RESULTS

METHOD:	6010	**ATI I.D.:**	412713
CLIENT:	PTI Environmental	**QC SAMPLE:**	412713-1
PROJECT #:	C4120308	**DATE DIGESTED:**	12/29/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	12/29/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	DUPLICATE RESULT	RPD	RPD CONTROL LIMIT
ZINC	0.22	0.23	4	20

Analyst: M.T. 12/29/94

Reviewer: [illegible] 12/29/94

Analytical Technologies, Inc.

METALS SPIKE RESULTS

METHOD:	6010	**ATI I.D.:**	412713
CLIENT:	PTI Environmental	**QC SAMPLE:**	412713-1
PROJECT #:	C4120308	**DATE DIGESTED:**	12/29/94
PROJECT NAME:	McCormick & Baxter	**DATE ANALYZED:**	12/29/94
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	SPIKE CONC	SPIKE RESULT	% RECOV	CONTROL LIMIT
ZINC	0.22	1.00	1.11	89	75-125%

Analyst: D.T 12/29/94

Reviewer: JLH 12/29/94

PTI ENVIRONMENTAL SERVICES

CHAIN OF CUSTODY RECORD/ SAMPLE ANALYSIS REQUEST FORM

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Project: (Name and Number) McCormick & Baxter C4120308

Samplers: (Signature) John Shaw

Sampling Contact: Steve Barnet

Phone: 503-636-4338

Ship Samples to: _____

Attn: _____

Sample No.	Tag No.	Date	Time	Sample Matrix: Water	Sediment	Tissue	Soil	Air	Other	Concentration (L M H)	Composite or Grab	Analyses Requested: Zinc						Extra Container	Archive
		94																	
BT3A	76655	12-28	1655	X								X							

Remarks: -1 412712

RUSH 24hr

Method of Shipment: _____

Condition of Samples Upon Receipt: _____

Custody Seal Intact: Yes ☐ No ☐ None ☐ Broken by: _____

Relinquished by: John Shaw (Signature) — Received by: _____ (Signature) — Date/Time 12/29/94 930

Relinquished by: _____ (Signature) — Received by: _____ (Signature) — Date/Time _____

Relinquished by: _____ (Signature) — Received by Mobile Lab for Field Analysis: _____ (Signature) — Date/Time _____

Received for Lab by: _____ (Signature) — Date/Time _____

Distribution: Original and One Copy - Accompany Shipment; One Copy - Project File

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